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HANDBUCH

FÜR

KÜSTENVERMESSUNGEN

HERAUSGEGEBEN

VOM

REICHS-MARINE-AMT



ZWEITER BAND: **TAFELN**

BERLIN 1906

ERNST SIEGFRIED MITTLER UND SOHN

KÖNIGLICHE HOFBUCHHANDLUNG

KOCHSTRASSE 68—71



Inhaltsverzeichnis.

Druckfehler-Berichtigung.

Sternpaar Nr. 529: Statt τ^2 Eridani lies τ^3 Eridani;
» » 556: » ν^4 Eridani » υ^4 Eridani;
» » 757: » ε Leonis » ι Leonis.

Vorwort

zum Verzeichnis der Zeitsternpaare, Tafel Ia und Ib.

Im Berliner astronomischen Jahrbuche von 1908 ist gegenüber den früheren Jahrgängen sowohl das Verzeichnis der mittleren Sternörter als auch die Ephemeridensammlung um eine Anzahl südlicher Sterne vermehrt worden. Da diese Änderung bei der Zusammenstellung der Zeitsternpaare noch nicht berücksichtigt worden ist, so sind folgende Berichtigungen bezüglich der Quellenangaben von 1908 an erforderlich.

In Tafel Ia:

Nr. des Sternpaars	Statt	lies	Gerade Aufsteigung
143	o^2 Canis maj. N.	[o^2 Canis maj.] N.	6^h 59^m
152	π Hydrae N.	[π Hydrae] N.	14 1
159	ε Scorpii N.	ε Scorpii	16 44
	α Columbae N.	α Columbae	5 36
167	τ Scorpii N.	[τ Scorpii] N.	16 30
	η Canis maj. N.	[η Canis maj.] N.	7 21
181	ι^1 Scorpii N.	[ι^1 Scorpii] N.	17 41
	ζ Argus N.	ζ Argus	8 0
184	λ Sagittarii N.	[λ Sagittarii] N.	18 22
204	γ Gruis N.	γ Gruis	21 48
	π Argus N.	π Argus	7 14
294	δ Sagittarii N.	[δ Sagittarii] N.	18 15
298	ζ Sagittarii N.	[ζ Sagittarii] N.	18 57
303	θ Eridani N.	ϑ Eridani	2 55
	γ Lupi N.	γ Lupi	15 29

Das Sternpaar Nr. 332 ist zu streichen, da der Stern [γ Arietis] im Verzeichnis der mittleren Örter fortgefallen ist.

In Tafel Ib:

Verzeichnis der Sterne, deren Bezeichnung zu ändern ist.

Neue Bezeichnung		Gerade Aufsteigung	Nr. des Sternpaars, in welchem der Stern vorkommt
α Sculptoris		0h 54m	507 514 516 855 859 870
ϑ Eridani		2 55	535 548 562 582 598 604 613 629 816 832 836 881
υ⁴ Eridani		4 14	556 633 642 890 912
α Columbae		5 36	668 905 927
[β Columbae]	N.	5 48	401 617 622 670
ζ Canis maj.		6 17	408 412 427 491 507 673 678 689
[o² Canis maj.]	N.	6 59	482 529 623
π Argus		7 14	414 416 429 490 627 636 680 682 694
[η Canis maj.]	N.	7 21	451 498 516 702 712
ζ Argus		8 0	433 434 535 631 662 701
α Pyxidis (statt α Mali)		8 40	556
ψ Argus		9 27	466 548 683 720 723
q Velorum		10 11	562 669 681 686 703
n Centauri		12 48	582 631 740 741 816
ι Centauri		13 16	617 627 750
[μ Centauri]	N.	13 44	669
[π Hydrae]	N.	14 1	761 765 766
ϑ Centauri		14 1	622 636 751 759
η Centauri		14 30	598 681 832
[κ Centauri]	N.	14 53	604 686 836
γ Lupi		15 29	613 662 683 703
[π Scorpii]	N.	15 53	649
[σ Scorpii]	N.	16 16	657 671
[τ Scorpii]	N.	16 30	658
ε Scorpii		16 44	633 634 890 892 905
[υ Scorpii]	N.	17 25	414 680 744 808
λ Scorpii		17 27	416 682 745 751 810
[κ Scorpii]	N.	17 36	433 701 720 740
[ι¹ Scorpii]	N.	17 41	434 466 629 723 741 881
[η Sagittarii]	N.	18 12	401 429 670 694 750 759 820
[δ Sagittarii]	N.	18 15	412 426 678 688 702 859
ε Sagittarii		18 18	642 644 668 912 914 927
[λ Sagittarii]	N.	18 22	696 761
[ξ Sagittarii]	N.	18 52	407 415 733 746 839 886
[ζ Sagittarii]	N.	18 57	427 440 451 689 706 712 870 902
[ψ Capricorni]	C.	20 41	484
γ Gruis		21 48	490 808 810 820

Die Sternpaare Nr. 531, 834, 843 und 899 sind zu streichen, da der Stern [γ Arietis] im Verzeichnis der mittleren Örter fortgefallen ist.

Tafel I.

Verzeichnis von Zeitsternpaaren

für die

Methode gleicher Zenitabstände.

Die nachstehenden Verzeichnisse Ia und Ib enthalten diejenigen Sternpaare für Zeitbestimmungen, welche aus den Sternen erster bis vierter Größe des Berliner astronomischen Jahrbuchs für die Epoche 1910.0 unter Berücksichtigung folgender Bedingungen zusammengestellt werden konnten:

Die Deklinationen der Sterne eines Paares unterscheiden sich voneinander um höchstens 1° 10′.

Innerhalb der angegebenen »Grenzen in Breite« sind die Sterne jedes Paares im Augenblicke ihrer gleichen Höhe in Azimut höchstens um 40° vom ersten Vertikal entfernt, und ihr Zenitabstand liegt zwischen 20° und 70°.

In der Tafel Ia, deren Paare vorwiegend durch die Verbindung je zweier hellerer Sterne gebildet werden, sind die Werte $\frac{1}{2}(\alpha_o + \alpha_w)$, $\frac{1}{2}(\alpha_o - \alpha_w)$, $\frac{1}{2}(\delta_o + \delta_w)$ und $\frac{1}{2}(\delta_o - \delta_w)$ enthalten. Es ist offenbar $\frac{1}{2}(\alpha_o + \alpha_w)$ annähernd die Frühlingspunkts-Orts-Zeit, bei der die beiden Sterne den gleichen Zenitabstand erreichen und bei welcher also die Beobachtung vorzunehmen ist; die Sternpaare sind deshalb nach diesem Werte geordnet. Der Betrag $\frac{1}{2}(\alpha_o - \alpha_w)$ gibt näherungsweise den Stundenwinkel der Sterne zur Zeit der Beobachtung. Ferner gibt die Tafel Ia für die Frp. O. Ztn. $\frac{1}{2}(\alpha_o + \alpha_w) - 10^m$ und $\frac{1}{2}(\alpha_o + \alpha_w) + 10^m$ die Hilfsgrößen P, p und q, die man zu den Vorbereitungsrechnungen braucht, und die folgende Bedeutung haben:

$$p \cdot \sin P = \cos \delta \cdot \cos t$$
$$p \cdot \cos P = \sin \delta$$
$$q = -\frac{p}{\cos \delta \cdot \sin t}$$

Mit Hilfe dieser Werte errechnen sich die genäherten Werte für Zenitabstand und Azimut zu der betreffenden Frp.O.Zt. nach den Formeln:

$$\cos z = p \cdot \sin (P + \varphi)$$
$$\operatorname{cotg} Az = q \cdot \cos (P + \varphi)$$

Im allgemeinen werden die in der Tafel Ia enthaltenen Sternpaare für alle Breiten ausreichen; sollten sich gelegentlich noch Lücken zeigen, so können diese durch das in Tafel Ib gegebene Ergänzungsverzeichnis ausgefüllt werden; in diesem Falle müssen die Hilfsgrößen

P, *p* und *q* nach den vorstehenden Formeln berechnet werden. Um auch für Beobachtungsorte auf der südlichen Halbkugel in genügender Weise zu sorgen, sind in beiden Verzeichnissen einige südliche Sterne aus fremden Ephemeriden-Sammlungen herangezogen worden; die betreffenden Sterne sind mit N (Nautical Almanac), C (Connaissance des Temps) und A (American Ephemeris) bezeichnet worden.

Näherungsformeln bei Benutzung nachfolgender Sternpaare:

$$\delta = \tfrac{1}{2}(\delta_o + \delta_w) \qquad \varepsilon = \tfrac{1}{2}(\delta_o - \delta_w)$$

$$t = \tfrac{1}{2}(\alpha_o - \alpha_w) - \tfrac{1}{2}(u_o - u_w)$$

$$r^s = \frac{\varepsilon''}{15}\left(\frac{tg\,\varphi}{sin\,t} - \frac{tg\,\delta}{tg\,t}\right)$$

$$\Delta u = \tfrac{1}{2}(\alpha_o + \alpha_w) - \tfrac{1}{2}(u_o + u_w) - r^s.$$

In diesen Formeln bezeichnen u_o und u_w die beobachteten und wegen Neigung verbesserten Uhrzeiten der gleichen Höhe des Ost- und West-Sterns.

Erklärung der Abkürzungen und der Nachweise.

B = Berliner astronomisches Jahrbuch; N = Nautical Almanac;
C = Connaissance des Temps; A = American Ephemeris.

No.	Beispiele für die Nachweise	Erklärung
1	δ Tauri	Ephemeride in B (von 1908 an), vielleicht auch in N, C und A.
2	[δ Eridani] N.	Mittlerer Ort für den Jahresanfang in B; Eph. in N (von 1907 an), vielleicht auch in C und A.
3	[ξ Tauri] C.	Mittl. Ort in B; in N nicht angegeben; Eph. in C, vielleicht auch in A.
4	[46 Leon. min.] A.	Mittl. Ort in B; in N und C nicht angegeben; Eph. in A.
5	[σ Orionis]	Mittl. Ort in B; in N, C und A nicht angegeben.
6	ξ Argus N.	In B nicht angegeben; Eph. in N, vielleicht auch in C und A.
7	ξ Urs. maj. C.	In B und N nicht angegeben; Eph. in C, vielleicht auch in A.

Man verbessere in den Fällen 2, 3 und 4, um alle zu benutzenden Sterne auf das Fundamentalsystem des Berliner astronomischen Jahrbuchs zu reduzieren, die aus fremden Ephemeridensammlungen entnommenen scheinbaren Örter um den Unterschied der mittleren Örter für den Jahresanfang.

Tafel I a. Zeitsternpaare

α und δ beziehen

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
1	δ Tauri δ Sagittae	4.0 4.0	4^h 18^m 19 43	0^h 1^m	4^h 17^m	+ 17° 49′	− 29′
2	γ Eridani α^2 Capricorni	3.0 3.3	3 54 20 13	0 3	3 50	− 13 18	− 28
3	ε Eridani ε Aquarii	3.0 3.6	3 29 20 43	0 6	3 23	− 9 48	+ 2
4	ε Tauri γ Sagittae	3.6 3.6	4 23 19 55	0 9	4 14	+ 19 7	− 8
5	[δ Eridani] N. ε Aquarii	3.0 3.6	3 39 20 43	0 11	3 28	− 9 57	− 7
6	α Triang. η Pegasi	3.6 3.0	1 48 22 39	0 13	1 35	+ 29 27	− 18
7	π Ceti ι Aquarii	4.0 4.0	2 40 22 2	0 21	2 19	− 14 16	+ 2
8	ε Persei ν Cygni	3.3 4.0	3 52 20 54	0 23	3 29	+ 40 17	− 32
9	o Tauri ε Pegasi	3.6 2.3	3 20 21 40	0 30	2 50	+ 9 5	− 22
10	[ξ Tauri] C. ε Pegasi	3.6 2.3	3 22 21 40	0 31	2 51	+ 9 26	− 1
11	α Tauri α Delphini	1 3.6	4 31 20 35	0 33	3 58	+ 15 58	+ 22
12	η Aurigae γ Cygni	3.6 2.4	5 0 20 19	0 40	4 21	+ 40 32	+ 34
13	o' Eridani β Aquarii	4.1 3.0	4 7 21 27	0 47	3 20	− 6 31	− 33
14	41 Arietis β Pegasi	3.8 2.2 bis 2.7	2 45 22 59	0 52	1 53	+ 27 15	− 21
15	η Aurigae ν Cygni	3.6 4.0	5 0 20 54	0 57	4 3	+ 40 58	+ 9
16	[ξ Tauri] C. ζ Pegasi	3.6 3.3	3 22 22 37	1 0	2 23	+ 9 53	− 28
17	12 Eridani α Pisc. austr.	3.3 1.3	3 8 22 53	1 0	2 8	− 29 43	+ 23
18	η Tauri λ Pegasi	3.0 4.0	3 42 22 42	1 12	2 30	+ 23 28	+ 22
19	$\varkappa$ Orionis ε Aquarii	2.6 3.6	5 43 20 43	1 13	4 30	− 9 46	+ 4
20	β Eridani β Aquarii	3.0 3.0	5 3 21 27	1 15	3 48	− 5 35	+ 23
21	ι Gemin. β Cygni	4.0 3.0	7 20 19 27	1 24	5 57	+ 27 52	+ 6

nebst Hilfsgrößen.

sich auf 1910.0.

Frühlings-punkts-Orts-Zeit	Ost-Stern *P*	Ost-Stern *p*	Ost-Stern *q*	West-Stern *P*	West-Stern *q*	West-Stern *p*	Grenzen in Breite
23h 51m	51° 37′	9.681	9.738	55° 0′	9.739	9.816n	−12° +85°
0 11	56 34	9.733	9.808	49 58	9.689	9.748n	
23 53	116 10	9.732	9.807	111 42	9.778	9.876n	−76 +29
0 13	113 11	9.781	9.880	114 33	9.728	9.801n	
23 56	106 2	9.788	9.891	104 35	9.831	9.965n	−74 +43
0 16	104 29	9.831	9.965	106 8	9.788	9.891n	
23 59	49 41	9.701	9.765	54 10	9.751	9.833n	−12 +88
0 19	54 34	9.749	9.831	49 16	9.703	9.767n	
0 1	107 0	9.776	9.872	104 56	9.821	9.946n	−73 +41
0 21	105 18	9.821	9.947	106 37	9.776	9.871n	
0 3	58 10	9.965	0.380	58 30	9.978	0.482n	+13 +50
0 23	59 8	9.977	0.479	57 31	9.966	0.383n	
0 11	107 41	9.908	0.139	106 47	9.932	0.218n	−51 +17
0 31	106 42	9.932	0.218	107 46	9.908	0.140n	
0 13	34 45	9.891	0.093	36 48	9.912	0.150n	+14 +90
0 33	37 50	9.908	0.140	33 45	9.895	0.104n	
0 20	77 46	9.854	0.010	77 43	9.888	0.086n	−37 +61
0 40	78 41	9.888	0.084	76 44	9.855	0.011n	
0 21	76 43	9.853	0.007	77 40	9.886	0.081n	−36 +61
0 41	77 43	9.886	0.081	76 40	9.853	0.007n	
0 23	58 7	9.726	9.798	62 56	9.771	9.864n	−23 +82
0 43	61 47	9.774	9.869	59 21	9.722	9.793n	
0 30	23 32	9.856	0.013	28 44	9.865	0.032n	+11 +90
0 50	27 45	9.871	0.046	24 24	9.848	9.998n	
0 37	101 32	9.789	9.892	98 49	9.832	9.966n	−68 +48
0 57	100 25	9.833	9.968	99 46	9.788	9.890n	
0 42	59 29	9.950	0.292	59 53	9.965	0.381n	+ 6 +53
1 2	60 38	9.965	0.378	58 43	9.950	0.295n	
0 47	27 14	9.869	0.041	31 19	9.884	0.075n	− 1 +90
1 7	31 3	9.885	0.078	27 29	9.867	0.037n	
0 50	78 5	9.899	0.114	77 41	9.926	0.195n	−24 +48
1 10	78 47	9.925	0.193	76 55	9.900	0.116n	
0 50	124 17	9.940	0.247	123 39	9.957	0.328n	−60 − 7
1 10	122 50	9.956	0.324	125 6	9.941	0.251n	
1 2	60 2	9.908	0.139	62 30	9.929	0.207n	− 6 +63
1 22	61 40	9.930	0.210	60 54	9.907	0.135n	
1 3	116 39	9.575	9.608	112 21	9.652	9.701n	−59 + 9
1 23	112 5	9.651	9.700	116 57	9.576	9.609n	
1 5	100 11	9.710	9.776	100 13	9.768	9.859n	−61 +40
1 25	98 55	9.767	9.857	101 40	9.711	9.778n	
1 14	356 56	9.672	9.726	6 22	9.671	9.725n	+45 +90
1 34	6 19	9.674	9.729	356 54	9.669	9.722n	

Tafel Ia.

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
22	ι Orionis β Aquarii	3.1 3.0	5h 31m 21 27	1h 29m	4h 2m	− 5° 58′	0′
23	α Leporis [γ Capric.] C.	3.0 3.6	5 29 21 35	1 32	3 57	− 17 29	− 24
24	γ Geminor. α Delphini	2.3 3.6	6 33 20 35	1 34	4 59	+ 16 2	+ 26
25	γ Orionis ϑ Pegasi	2.0 3.3	5 20 22 6	1 43	3 37	+ 6 1	+ 15
26	δ Orionis α Aquarii	2.2 bis 2.7 3.0	5 27 22 1	1 44	3 43	− 0 34	+ 12
27	ε Orionis α Aquarii	2.0 3.0	5 32 22 1	1 46	3 45	− 1 0	− 15
28	[η Orion. m.] N. γ Aquarii	3.3 3.4	5 20 22 17	1 48	3 31	− 2 10	− 19
29	ε Orionis γ Aquarii	2.0 3.4	5 32 22 17	1 54	3 37	− 1 33	+ 17
30	[σ Orionis] γ Aquarii	3.7 3.4	5 34 22 17	1 56	3 39	− 2 15	− 24
31	β Canis maj. [γ Capric.] C.	2.6 3.6	6 19 21 35	1 57	4 22	− 17 29	− 25
32	δ Orionis η Aquarii	2.2 bis 2.7 3.8	5 27 22 31	1 59	3 28	− 0 28	+ 6
33	ε Orionis η Aquarii	2.0 3.8	5 32 22 31	2 1	3 30	− 0 55	− 20
34	β Tauri β Pegasi	2.0 2.2 bis 2.7	5 21 22 59	2 10	3 11	+ 28 4	+ 28
35	α Canis maj. δ Capric.	1 3.0	6 41 21 42	2 12	4 30	− 16 34	− 2
36	[γ Leporis] c² Aquarii	3.9 4.0	5 41 23 5	2 23	3 18	− 22 4	− 24
37	η Geminor. λ Pegasi	3.2 bis 4.2 4.0	6 9 22 42	2 26	3 44	+ 22 49	− 17
38	μ Geminor. λ Pegasi	3.0 4.0	6 18 22 42	2 30	3 48	+ 22 50	− 16
39	γ Orionis ω Piscium	2.0 4.0	5 20 23 55	2 37	2 43	+ 6 19	− 3
40	β Tauri α Androm.	2.0 2.0	5 21 0 4	2 42	2 38	+ 28 34	− 2
41	β Orionis ι Ceti	1 3.3	5 10 0 15	2 43	2 28	− 8 49	+ 31
42	α Canis maj. δ Aquarii	1 3.0	6 41 22 50	2 46	3 56	− 16 27	− 9
43	α Orionis ω Piscium	1.0 bis 1.4 4.0	5 50 23 55	2 52	2 58	+ 6 53	+ 31

Frühlings-punkts-Orts-Zeit	Ost-Stern P	Ost-Stern p	Ost-Stern q	West-Stern P	West-Stern p	West-Stern q	Grenzen in Breite
1h 19m	102° 59′	9.665	9.718	101° 10′	9.730	9.804n	−60° +36°
1 39	101 10	9.730	9.804	102 59	9.665	9.718n	
1 22	124 15	9.737	9.814	119 14	9.779	9.877n	−85 +21
1 42	120 27	9.783	9.882	122 57	9.732	9.807n	
1 24	36 59	9.550	9.580	47 43	9.601	9.639n	+25 +71
1 44	46 3	9.611	9.651	38 35	9.536	9.564n	
1 33	78 39	9.744	9.824	80 44	9.794	9.901n	−45 +65
1 53	79 55	9.795	9.902	79 34	9.743	9.822n	
1 34	90 42	9.721	9.791	91 16	9.777	9.873n	−54 +52
1 54	90 37	9.777	9.873	91 26	9.721	9.791n	
1 36	92 26	9.714	9.782	91 17	9.771	9.864n	−54 +50
1 56	92 8	9.771	9.865	91 28	9.714	9.782n	
1 38	94 21	9.755	9.841	92 53	9.805	9.919n	−59 +53
1 58	93 53	9.805	9.919	93 14	9.755	9.840n	
1 44	92 18	9.738	9.816	92 59	9.791	9.896n	−57 +52
2 4	92 2	9.791	9.896	93 22	9.739	9.816n	
1 46	94 53	9.735	9.812	93 0	9.788	9.891n	−57 +50
2 6	94 19	9.788	9.892	93 24	9.735	9.811n	
1 47	130 43	9.673	9.728	124 2	9.720	9.790n	−83 +10
2 7	125 24	9.725	9.797	129 17	9.666	9.719n	
1 49	90 38	9.763	9.852	90 54	9.812	9.930n	−57 +55
2 9	90 34	9.812	9.930	91 0	9.763	9.852n	
1 51	92 12	9.757	9.844	90 54	9.807	9.922n	−57 +55
2 11	91 58	9.807	9.922	91 1	9.757	9.843n	
2 0	49 41	9.868	0.039	53 27	9.891	0.093n	− 8 +84
2 20	52 22	9.893	0.099	50 47	9.865	0.032n	
2 2	130 55	9.639	9.685	124 58	9.696	9.757n	−81 + 4
2 22	125 4	9.696	9.758	130 49	9.639	9.685n	
2 13	123 54	9.836	9.974	120 13	9.865	0.033n	−89 +25
2 33	121 15	9.868	0.038	122 50	9.833	9.968n	
2 16	51 37	9.791	9.895	54 25	9.829	9.960n	−20 +90
2 36	55 10	9.827	9.956	50 51	9.793	9.899n	
2 20	50 45	9.783	9.883	53 46	9.822	9.948n	−19 +90
2 40	54 28	9.820	9.944	50 2	9.786	9.887n	
2 27	81 26	9.865	0.032	81 55	9.897	0.108n	−39 +54
2 47	82 3	9.897	0.108	81 18	9.865	0.032n	
2 32	53 46	9.907	0.137	55 39	9.928	0.204n	+ 1 +70
2 52	55 43	9.928	0.204	53 41	9.908	0.138n	
2 33	100 42	9.891	0.093	101 15	9.919	0.173n	−50 +28
2 53	100 2	9.918	0.171	102 0	9.892	0.095n	
2 36	121 55	9.732	9.807	117 52	9.779	9.876n	−83 +23
2 56	118 19	9.780	9.877	121 26	9.731	9.805n	
2 42	79 14	9.838	9.978	81 28	9.873	0.051n	−45 +65
3 2	80 6	9.874	0.053	80 43	9.837	9.976n	

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
44	δ Geminor. λ Pegasi	3.3 4.0	7^h 15^m 22 42	2^h 58^m	4^h 16^m	+ 22° 37′	− 28′
45	κ Orionis ι Ceti	2.6 3.3	5 43 0 15	2 59	2 44	− 9 31	− 11
46	α Leporis β Ceti	3.0 2.0	5 29 0 39	3 4	2 25	− 18 11	+ 18
47	ι Geminor. β Pegasi	4.0 2.2 bis 2.7	7 20 22 59	3 10	4 10	+ 27 47	+ 16
48	β Orionis ϑ Ceti	1 3.1	5 10 1 20	3 15	1 55	− 8 29	+ 10
49	β Geminor. β Pegasi	1.3 2.2 bis 2.7	7 40 22 59	3 20	4 20	+ 27 55	+ 19
50	κ Orionis [η Ceti] C.	2.6 3.1	5 43 1 4	3 24	2 20	− 10 11	+ 29
51	β Canis maj. β Ceti	2.6 2.0	6 19 0 39	3 29	2 50	− 18 12	+ 17
52	κ Orionis ϑ Ceti	2.6 3.1	5 43 1 20	3 31	2 12	− 9 10	− 32
53	β Tauri α Triang.	2.0 3.6	5 21 1 48	3 34	1 46	+ 28 50	− 18
54	ζ Tauri β Arietis	3.3 2.8	5 32 1 50	3 41	1 51	+ 20 44	+ 22
55	κ Orionis ζ Ceti	2.6 3.0	5 43 1 47	3 45	1 58	− 10 14	+ 32
56	α Canis min. ω Piscium	1 4.0	7 35 23 55	3 45	3 50	+ 5 55	− 27
57	[δ Leporis] υ Ceti	4.0 4.0	5 47 1 56	3 52	1 56	− 21 12	+ 19
58	β Geminor. α Androm.	1.3 2.0	7 40 0 4	3 52	3 48	+ 28 25	− 10
59	α Geminor. π Androm.	2 4.0	7 29 0 32	4 0	3 28	+ 32 39	− 34
60	η Geminor. α Arietis	3.2 bis 4.2 2.0	6 9 2 2	4 6	2 4	+ 22 47	− 15
61	μ Geminor. α Arietis	3.0 2.0	6 18 2 2	4 10	2 8	+ 22 48	− 14
62	α Canis maj. τ Ceti	1 3.3	6 41 1 40	4 11	2 31	− 16 30	− 5
63	ζ Geminor. β Arietis	3.7 bis 4.5 2.8	6 59 1 50	4 24	2 35	+ 20 32	+ 10
64	δ Geminor. α Arietis	3.3 2.0	7 15 2 2	4 38	2 36	+ 22 36	− 27
65	β Geminor. α Triang.	1.3 3.6	7 40 1 48	4 44	2 56	+ 28 42	− 27

Frühlings-punkts-Orts-Zeit	Ost-Stern P	p	q	West-Stern P	p	q	Grenzen in Breite
2^h 48^m	44° 20′	9.722	9.793	48° 9′	9.769	9.861n	− 8° + 90°
3 8	49 28	9.764	9.853	43 0	9.729	9.803n	
2 49	103 17	9.865	0.033	101 52	9.897	0.107n	− 57 + 33
3 9	102 21	9.897	0.108	102 46	9.865	0.032n	
2 54	112 28	9.905	0.131	111 53	9.930	0.208n	− 57 + 12
3 14	111 12	9.929	0.206	113 11	9.906	0.133n	
3 0	38 25	9.777	9.874	43 39	9.806	9.921n	− 7 + 90
3 20	43 11	9.808	9.925	38 52	9.775	9.869n	
3 5	99 42	9.933	0.222	99 38	9.954	0.311n	− 37 + 18
3 25	99 15	9.954	0.311	100 6	9.933	0.222n	
3 10	35 24	9.764	9.853	41 24	9.791	9.895n	− 4 + 90
3 30	40 38	9.795	9.902	36 9	9.759	9.846n	
3 14	102 9	9.903	0.126	102 34	9.929	0.208n	− 47 + 23
3 34	101 27	9.929	0.206	103 20	9.904	0.128n	
3 19	114 33	9.869	0.042	113 34	9.899	0.115n	− 68 + 21
3 39	112 52	9.898	0.112	115 17	9.870	0.044n	
3 21	101 52	9.914	0.156	100 0	9.937	0.237n	− 42 + 21
3 41	101 14	9.937	0.238	100 35	9.913	0.154n	
3 24	58 7	9.956	0.326	58 35	9.971	0.419n	+ 10 + 53
3 44	59 14	9.970	0.416	57 28	9.957	0.329n	
3 31	65 56	9.946	0.272	67 40	9.962	0.359n	0 + 47
3 51	66 54	9.962	0.361	66 44	9.945	0.270n	
3 35	101 25	9.930	0.212	102 4	9.952	0.302n	− 40 + 17
3 55	100 52	9.951	0.300	102 40	9.931	0.214n	
3 35	79 11	9.705	9.770	79 0	9.764	9.853n	− 40 + 62
3 55	80 33	9.763	9.851	77 26	9.707	9.772n	
3 42	114 6	9.941	0.253	113 46	9.959	0.341n	− 49 + 2
4 2	113 5	9.959	0.339	114 48	9.942	0.255n	
3 42	43 22	9.814	9.933	46 48	9.845	9.990n	− 14 + 90
4 2	47 13	9.843	9.987	42 57	9.816	9.937n	
3 50	42 44	9.859	0.020	44 42	9.887	0.083n	− 1 + 90
4 10	45 57	9.883	0.073	41 29	9.864	0.030n	
3 56	63 34	9.935	0.229	64 11	9.954	0.312n	− 1 + 54
4 16	64 45	9.953	0.310	63 0	9.936	0.231n	
4 0	63 16	9.931	0.213	63 58	9.950	0.295n	− 2 + 56
4 20	64 30	9.950	0.293	62 43	9.931	0.215n	
4 1	111 18	9.895	0.104	109 49	9.921	0.179n	− 58 + 17
4 21	110 2	9.921	0.179	111 5	9.895	0.104n	
4 14	63 21	9.897	0.108	65 19	9.921	0.178n	− 12 + 63
4 34	64 55	9.921	0.180	63 46	9.896	0.106n	
4 28	61 27	9.897	0.108	62 5	9.922	0.183n	− 8 + 65
4 48	63 7	9.921	0.179	60 23	9.899	0.113n	
4 34	52 2	9.886	0.081	53 21	9.912	0.149n	− 3 + 77
4 54	54 21	9.910	0.144	51 0	9.889	0.087n	

Tafel Ia.

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
66	α Hydrae ι Ceti	2.0 3.3	9h 23m 0 15	4h 49m	4h 34m	− 8° 48′	+ 32′
67	ζ Hydrae ε Piscium	3.3 4.0	8 51 0 58	4 . 54	3 56	+ 6 51	− 34
68	ι Geminor. 41 Arietis	4.0 3.8	7 20 2 45	5 2	2 18	+ 27 26	+ 33
69	ε Canis maj. 12 Eridani	1.6 3.3	6 55 3 8	5 2	1 53	− 29 6	+ 15
70	40 Lyncis β Androm.	3.3 2.3	9 16 1 5	5 10	4 5	+ 34 57	− 11
71	η Canis maj. 12 Eridani	2.4 3.3	7 21 3 8	5 14	2 6	− 29 14	+ 6
72	Br. 1197 o Ceti C.	3.6 1.7 bis 9.0	8 21 2 15	5 18	3 3	− 3 30	− 7
73	α Hydrae ϑ Ceti	2.0 3.1	9 23 1 20	5 21	4 2	− 8 27	+ 11
74	β Canis min. o Tauri	3.0 3.6	7 22 3 20	5 21	2 1	+ 8 36	− 7
75	β Canis min. [ξ Tauri] C.	3.0 3.6	7 22 3 22	5 22	2 0	+ 8 57	− 28
76	β Cancri μ Ceti	3.6 4.0	8 12 2 40	5 26	2 46	+ 9 36	− 8
77	ι Navis τ^3Eridani C.	3.0 4.1	8 4 2 58	5 31	2 33	− 24 1	− 2
78	$\varkappa$ Geminor. η Tauri	3.6 3.0	7 39 3 42	5 41	1 58	+ 24 13	+ 24
79	ξ Argus N.* τ^6Eridani	3.4 4.0	7 45 3 43	5 44	2 1	− 24 4	− 34
80	β Cancri o Tauri	3.6 3.6	8 12 3 20	5 46	2 26	+ 9 5	+ 22
81	β Cancri [ξ Tauri] C.	3.6 3.6	8 12 3 22	5 47	2 25	+ 9 26	+ 1
82	ε Leonis α Arietis	3.0 2.0	9 41 2 2	5 51	3 49	+ 23 37	+ 35
83	λ Hydrae ζ Ceti	4.0 3.0	10 6 1 47	5 57	4 10	− 11 21	− 34
84	ϑ Hydrae α Ceti	4.0 2.3	9 10 2 58	6 4	3 6	+ 3 13	− 31
85	ζ Leonis α Arietis	3.0 2.0	10 12 2 2	6 7	4 5	+ 23 27	+ 25
86	α Hydrae η Eridani	2.0 3.0	9 23 2 52	6 8	3 16	− 8 46	+ 30
87	ϑ Leonis η Piscium	3.3 3.6	11 10 1 27	6 18	4 51	+ 15 24	+ 31

Tafel Ia.

Frühlingspunkts-Orts-Zeit	Ost-Stern			West-Stern			Grenzen in Breite
	P	*p*	*q*	*P*	*p*	*q*	
4^h 39^m	114° 6′	9.547	9.576	112° 1′	9.636	9.681*n*	−53° +6°
4 59	109 41	9.630	9.674	116 49	9.555	9.585*n*	
4 44	76 59	9.687	9.745	76 44	9.749	9.832*n*	−36 +63
5 4	78 42	9.747	9.829	74 44	9.690	9.749*n*	
4 52	56 23	9.928	0.203	59 8	9.945	0.272*n*	+2 +61
5 12	57 57	9.946	0.277	57 36	9.927	0.198*n*	
4 52	122 42	9.951	0.299	121 59	9.966	0.386*n*	−54 −10
5 12	121 28	9.966	0.384	123 13	9.952	0.301*n*	
5 0	32 24	9.830	9.962	36 18	9.854	0.009*n*	−5 +90
5 20	36 41	9.852	0.005	32 2	9.832	9.966*n*	
5 4	123 55	9.941	0.252	122 45	9.957	0.331*n*	−58 −7
5 24	122 31	9.957	0.330	124 9	9.941	0.253*n*	
5 8	95 25	9.824	9.952	94 39	9.863	0.027*n*	−62 +53
5 28	94 57	9.863	0.028	95 5	9.824	9.952*n*	
5 11	107 43	9.674	9.729	106 0	9.737	9.814*n*	−64 +31
5 31	105 19	9.736	9.812	108 29	9.676	9.731*n*	
5 11	79 57	9.927	0.198	80 10	9.948	0.285*n*	−19 +39
5 31	80 27	9.948	0.284	79 40	9.927	0.198*n*	
5 12	79 59	9.928	0.203	79 24	9.949	0.291*n*	−18 +39
5 32	80 28	9.949	0.290	78 52	9.928	0.204*n*	
5 16	76 58	9.863	0.027	77 34	9.895	0.103*n*	−34 +59
5 36	77 54	9.895	0.102	76 36	9.863	0.028*n*	
5 21	120 28	9.905	0.130	118 42	9.928	0.201*n*	−65 +6
5 41	118 46	9.928	0.201	120 23	9.905	0.130*n*	
5 31	61 35	9.942	0.258	63 37	9.959	0.339*n*	+1 +53
5 51	62 46	9.959	0.342	62 28	9.941	0.255*n*	
5 34	118 37	9.940	0.247	116 12	9.956	0.325*n*	−53 −1
5 54	117 24	9.957	0.329	117 23	9.938	0.242*n*	
5 36	77 54	9.895	0.102	79 32	9.921	0.179*n*	−26 +48
5 56	78 38	9.921	0.180	78 51	9.894	0.101*n*	
5 37	77 57	9.896	0.106	78 44	9.923	0.185*n*	−26 +48
5 57	78 41	9.923	0.185	78 0	9.896	0.106*n*	
5 41	48 13	9.789	9.892	53 34	9.819	9.942*n*	−18 +90
6 1	52 3	9.824	9.951	49 46	9.782	9.882*n*	
5 47	116 26	9.666	9.719	110 47	9.722	9.792*n*	−68 +23
6 7	112 48	9.726	9.799	114 10	9.660	9.711*n*	
5 54	85 54	9.817	9.940	84 49	9.858	0.017*n*	−54 +63
6 14	86 15	9.857	0.016	84 19	9.818	9.941*n*	
5 57	45 3	9.758	9.844	50 42	9.791	9.895*n*	−13 +90
6 17	49 35	9.795	9.902	46 10	9.752	9.836*n*	
5 58	103 7	9.802	9.914	103 18	9.845	9.991*n*	−73 +46
6 18	101 54	9.844	9.988	104 38	9.804	9.917*n*	
6 8	41 33	9.564	9.595	51 41	9.617	9.658*n*	+15 +68
6 28	49 41	9.627	9.670	43 34	9.550	9.579*n*	

Tafel Ia.

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
88	Br. 1197 ν Eridani	3.6 3.3	8h 21m 4 32	6h 26m	1h 55m	− 3° 34′	− 2′
89	[o Leonis] N. [ξ Tauri] C.	3.6 3.6	9 36 3 22	6 29	3 7	+ 9 52	+ 26
90	δ Leonis β Arietis	2.3 2.8	11 9 1 50	6 29	4 40	+ 20 42	+ 19
91	Br. 1197 [μ Eridani] N.	3.6 3.6	8 21 4 41	6 31	1 50	− 3 31	− 6
92	40 Lyncis ξ Persei	3.3 4.0	9 16 3 53	6 34	2 41	+ 35 9	− 23
93	ε Leonis η Tauri	3.0 3.0	9 41 3 42	6 41	2 59	+ 24 0	+ 11
94	α Leonis f Tauri	1.3 4.0	10 4 3 26	6 45	3 19	+ 12 31	− 7
95	ζ Leonis η Tauri	3.0 3.0	10 12 3 42	6 57	3 15	+ 23 51	+ 1
96	α Leonis λ Tauri	1.3 3.4 bis 4.2	10 4 3 56	7 0	3 4	+ 12 19	+ 5
97	ε Corvi υ Ceti	3.0 4.0	12 5 1 56	7 1	5 5	− 21 49	− 18
98	ζ Hydrae γ Orionis	3.3 2.0	8 51 5 20	7 5	1 45	+ 6 17	+ 1
99	η Leonis δ Tauri	3.3 4.0	10 2 4 18	7 10	2 52	+ 17 16	− 4
100	η Leonis α Tauri	3.3 1.0	10 2 4 31	7 17	2 46	+ 16 46	+ 26
101	α Hydrae β Orionis	2.0 1.0	9 23 5 10	7 17	2 6	− 8 17	+ 1
102	ξ Urs. maj. C. [o Persei]	3.8 4.0	11 13 3 39	7 26	3 47	+ 32 1	+ 1
103	δ Crateris γ Eridani	3.3 3.0	11 15 3 54	7 34	3 40	− 14 2	− 16
104	o Virginis o Tauri	4.0 3.6	12 1 3 20	7 40	4 20	+ 8 58	+ 16
105	β Corvi τ³ Eridiani C.	2.3 4.1	12 30 2 58	7 44	4 46	− 23 26	+ 32
106	ϑ Leonis α Tauri	3.3 1	11 10 4 31	7 50	3 19	+ 16 7	− 12
107	ν Urs. maj. ι Aurigae	3.3 3.0	11 14 4 51	8 2	3 11	+ 33 18	+ 17
108	β Crateris ε Leporis	4.0 3.5	11 7 5 2	8 4	3 3	− 22 25	+ 5
109	ε Virginis f Tauri	2.6 4.0	12 58 3 26	8 12	4 46	+ 12 2	− 36

Frühlingspunkts-Orts-Zeit	Ost-Stern *P*	Ost-Stern *p*	Ost-Stern *q*	West-Stern *P*	West-Stern *p*	West-Stern *q*	Grenzen in Breite
6h 16m	94° 13′	9.933	0.220	93° 56′	9.953	0.310n	−32° +23°
6 36	94 1	9.953	0.310	94 8	9.933	0.220n	
6 19	74 26	9.824	9.951	76 57	9.860	0.023n	−44 +73
6 39	75 45	9.862	0.025	75 44	9.822	9.949n	
6 19	38 7	9.659	9.709	45 55	9.699	9.762n	+3 +90
6 39	44 56	9.705	9.769	39 5	9.652	9.700n	
6 21	94 10	9.938	0.239	93 46	9.957	0.332n	−30 +21
6 41	93 59	9.957	0.332	93 57	9.938	0.239n	
6 24	46 35	9.919	0.172	47 53	9.938	0.240n	+11 +74
6 44	48 42	9.936	0.234	45 46	9.921	0.178n	
6 31	56 28	9.870	0.044	59 9	9.896	0.107n	−13 +77
6 51	58 43	9.897	0.109	56 55	9.869	0.041n	
6 35	70 15	9.803	9.916	71 45	9.844	9.989n	−40 +78
6 55	72 4	9.843	9.988	69 55	9.804	9.917n	
6 47	54 47	9.846	9.993	57 27	9.876	0.056n	−19 +87
7 7	57 25	9.876	0.056	54 49	9.846	9.993n	
6 50	71 38	9.834	9.970	73 22	9.869	0.042n	−38 +73
7 10	73 8	9.869	0.042	71 53	9.834	9.969n	
6 51	154 18	9.621	9.663	144 34	9.653	9.702n	−90 −22
7 11	145 24	9.660	9.711	153 36	9.612	9.652n	
6 55	82 50	9.943	0.263	83 9	9.962	0.359n	−17 +31
7 15	83 8	9.962	0.359	82 51	9.943	0.263n	
7 0	66 8	9.864	0.030	67 39	9.894	0.101n	−24 +69
7 20	67 49	9.894	0.101	65 58	9.864	0.030n	
7 7	66 44	9.874	0.053	69 21	9.902	0.121n	−21 +65
7 27	68 17	9.903	0.124	67 51	9.873	0.049n	
7 7	99 57	9.920	0.176	99 29	9.943	0.260n	−40 +22
7 27	99 27	9.943	0.260	100 0	9.920	0.176n	
7 16	39 11	9.835	9.972	43 1	9.860	0.022n	−7 +90
7 36	42 59	9.860	0.022	39 13	9.835	9.972n	
7 24	115 27	9.759	9.846	111 59	9.803	9.916n	−79 +32
7 44	112 46	9.805	9.918	114 35	9.757	9.843n	
7 30	66 55	9.612	9.652	71 36	9.681	9.738n	−19 +60
7 50	70 33	9.683	9.740	68 6	9.609	9.648n	
7 34	146 44	9.668	9.721	141 1	9.718	9.788n	−90 −8
7 54	139 34	9.709	9.774	148 4	9.680	9.737n	
7 40	64 58	9.812	9.930	66 37	9.850	0.002n	−35 +84
8 0	67 10	9.849	0.000	64 23	9.813	9.932n	
7 52	43 53	9.885	0.078	47 15	9.905	0.129n	+2 +85
8 12	46 39	9.906	0.134	44 29	9.883	0.073n	
7 54	121 39	9.860	0.021	119 36	9.889	0.088n	−78 +18
8 14	119 24	9.889	0.087	121 50	9.860	0.022n	
8 2	53 45	9.526	9.552	58 1	9.616	9.656n	+11 +57
8 22	60 34	9.606	9.645	50 56	9.540	9.568n	

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
110	[ν Hydrae] N. ζ Leporis	3.3 3.6	10^h 45^m 5 43	8^h 14^m	2^h 31^m	− 15° 17′	− 26′
111	η Leonis γ Geminor.	3.3 2.3	10 2 6 33	8 17	1 45	+ 16 50	+ 22
112	δ Leonis ζ Tauri	2.3 3.3	11 9 5 32	8 21	2 49	+ 21 3	− 2
113	ε Virginis λ Tauri	2.6 3.4 bis 4.2	12 58 3 56	8 27	4 31	+ 11 50	− 24
114	δ Crateris ζ Leporis	3.3 3.6	11 15 5 43	8 29	2 46	− 14 34	+ 17
115	ε Corvi ε Leporis	3.0 3.5	12 5 5 2	8 34	3 32	− 22 18	+ 11
116	δ Crateris [η Leporis]	3.3 3.6	11 15 5 52	8 34	2 41	− 14 14	− 3
117	δ Bootis β Triang.	3.0 3.0	15 12 2 4	8 38	6 34	+ 34 6	− 27
118	[ν Hydrae] N. α Canis maj.	3.3 1	10 45 6 41	8 43	2 2	− 16 9	+ 26
119	β Corvi ε Leporis	2.3 3.5	12 30 5 2	8 46	3 44	− 22 42	− 12
120	[γ Corvi] N. α Leporis	2.0 3.0	12 11 5 29	8 50	3 21	− 17 28	+ 25
121	ϑ Leonis γ Geminor.	3.3 2.3	11 10 6 33	8 51	2 18	+ 16 12	− 17
122	η Virginis δ Orionis	3.3 2.2 bis 2.7	12 15 5 27	8 51	3 24	− 0 16	+ 6
123	ε Corvi [γ Leporis]	3.0 3.9	12 5 5 41	8 53	3 12	− 22 18	+ 11
124	η Virginis ε Orionis	3.3 2.0	12 15 5 32	8 53	3 22	− 0 43	+ 33
125	[γ Virgin.m.] N. δ Orionis	3 2.2 bis 2.7	12 37 5 27	9 2	3 35	− 0 40	− 18
126	δ Leonis ζ Geminor.	2.3 3.7 bis 4.5	11 9 6 59	9 4	2 5	+ 20 52	+ 9
127	[γ Virgin.m.] N. ε Orionis	3 2.0	12 37 5 32	9 4	3 33	− 1 6	+ 9
128	δ Corvi ζ Leporis	2.3 3.6	12 25 5 43	9 4	3 21	− 15 26	− 35
129	β Corvi [γ Leporis]	2.3 3.9	12 30 5 41	9 5	3 24	− 22 41	− 13
130	γ Hydrae ε Leporis	3.2 3.5	13 14 5 2	9 8	4 6	− 22 36	− 6
131	ϑ Leonis λ Geminor.	3.3 3.8	11 10 7 13	9 11	1 58	+ 16 19	− 23

Frühlings-punkts-Orts-Zeit		Ost-Stern *P*		Ost-Stern *p*	Ost-Stern *q*	West-Stern *P*		West-Stern *p*	West-Stern *q*	Grenzen in Breite	
8h	4m	110°	15′	9.894	0.099	108°	0′	9.919	0.172n	−57°	+19°
8	24	109	2	9.920	0.174	109	10	9.892	0.097n		
8	7	70	33	9.948	0.286	72	6	9.965	0.378n	−4	+42
8	27	71	19	9.965	0.380	71	22	9.948	0.284n		
8	11	61	38	9.878	0.061	63	24	9.905	0.131n	−15	+70
8	31	63	29	9.905	0.130	61	33	9.878	0.062n		
8	17	59	4	9.587	9.622	62	37	9.664	9.715n	−6	+65
8	37	64	12	9.659	9.709	57	18	9.594	9.630n		
8	19	109	30	9.869	0.041	108	51	9.900	0.116n	−64	+27
8	39	108	9	9.899	0.114	110	15	9.870	0.043n		
8	24	125	40	9.810	9.928	123	3	9.846	9.993n	−90	+25
8	44	122	34	9.845	9.991	126	9	9.812	9.930n		
8	24	109	9	9.876	0.058	107	44	9.905	0.131n	−60	+24
8	44	107	52	9.905	0.132	109	1	9.876	0.057n		
8	28	344	3	9.761	9.848	351	26	9.759	9.845n	+49	+90
8	48	351	8	9.749	9.831	344	34	9.770	9.862n		
8	33	108	33	9.930	0.211	108	39	9.951	0.298n	−47	+9
8	53	107	41	9.950	0.295	109	33	9.931	0.213n		
8	36	128	57	9.792	9.896	124	50	9.826	9.955n	−90	+20
8	56	125	23	9.827	9.958	128	24	9.790	9.893n		
8	40	116	53	9.812	9.930	115	40	9.851	0.003n	−86	+34
9	0	124	32	9.849	9.999	118	6	9.814	9.935n		
8	41	70	19	9.911	0.147	70	45	9.935	0.227n	−14	+52
9	1	71	23	9.934	0.225	69	39	9.911	0.149n		
8	41	90	17	9.774	9.869	90	33	9.821	9.947n	−57	+56
9	1	90	15	9.821	9.947	90	37	9.774	9.869n		
8	43	122	38	9.844	9.989	120	36	9.876	0.056n	−84	+22
9	3	120	9	9.875	0.054	123	6	9.845	9.991n		
8	43	90	17	9.780	9.878	91	53	9.826	9.955n	−58	+57
9	3	90	15	9.826	9.955	92	5	9.780	9.878n		
8	52	91	43	9.745	9.826	90	35	9.797	9.905n	−56	+53
9	12	91	32	9.797	9.905	90	39	9.745	9.826n		
8	54	65	11	9.932	0.216	66	40	9.951	0.297n	−4	+52
9	14	66	19	9.951	0.298	65	32	9.931	0.215n		
8	54	91	42	9.751	9.834	91	59	9.802	9.914n	−56	+53
9	14	91	31	9.802	9.914	92	14	9.751	9.834n		
8	54	115	24	9.809	9.925	111	33	9.844	9.989n	−82	+36
9	14	113	8	9.847	9.994	113	41	9.805	9.919n		
8	55	125	27	9.827	9.956	122	2	9.858	0.017n	−90	+24
9	15	122	35	9.859	0.019	124	54	9.825	9.954n		
8	58	133	42	9.747	9.828	128	50	9.785	9.886n	−90	+13
9	18	129	7	9.786	9.888	133	25	9.746	9.826n		
9	1	71	23	9.934	0.226	71	23	9.954	0.315n	−9	+45
9	21	72	14	9.954	0.313	70	30	9.935	0.229n		

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
132	δ Leonis δ Geminor.	2.3 3.3	11h 9m 7 15	9h 12m	1h 57m	+21° 35′	−34′
133	[γ Corvi] N. β Canis maj.	2.0 2.6	12 11 6 19	9 15	2 56	−17 29	+26
134	α Bootis ε Tauri	1 3.6	14 12 4 23	9 17	4 54	+19 19	+20
135	β Bootis ε Persei	3.0 3.3	14 59 3 52	9 25	5 33	+40 15	+30
136	[γ Corvi] N. α Canis maj.	2.0 1	12 11 6 41	9 26	2 45	−16 49	−13
137	γ Hydrae [γ Leporis]	3.2 3.9	13 14 5 41	9 27	3 47	−22 35	−7
138	ζ Virginis δ Orionis	3.3 2.2 bis 2.7	13 30 5 27	9 29	4 1	−0 15	+7
139	ζ Virginis ε Orionis	3.3 2.0	13 30 5 32	9 31	3 59	−0 42	+34
140	α Virginis κ Orionis	1 2.6	13 20 5 43	9 32	3 48	−10 12	−30
141	δ Corvi α Canis maj.	2.3 1	12 25 6 41	9 33	2 52	−16 18	+17
142	[ϑ Coron. bor.] ζ Persei	4.0 3.0	15 29 3 48	9 39	5 50	+31 38	+1
143	β Corvi o² Canis maj. N.	2.3 3.0	12 30 6 59	9 44	2 45	−23 18	+24
144	α Librae μ Leporis N.	2.3 3.3	14 46 5 9	9 57	4 49	−15 59	+19
145	β Bootis η Aurigae	3.0 3.6	14 59 5 0	9 59	4 59	+40 56	−11
146	δ Bootis ι Aurigae	3.0 3.0	15 12 4 51	10 1	5 10	+33 20	+19
147	μ Virginis ι Orionis	4.0 3.1	14 38 5 31	10 5	4 34	−5 37	+21
148	o Virginis β Cancri	4.0 3.6	12 1 8 12	10 6	1 54	+9 21	−7
149	ζ Herculis N. ζ Persei	2.6 3.0	16 38 3 48	10 13	6 25	+31 41	+4
150	β Corvi ι Navis	2.3 3.0	12 30 8 4	10 17	2 13	−23 28	+34
151	β Coron. bor. β Tauri	3.8 2.0	15 24 5 21	10 22	5 2	+28 58	+26
152	π Hydrae N. δ Canis maj.	3.5 2.0	14 1 7 5	10 33	3 28	−26 25	0
153	α Bootis ζ Gemin.	1 3.7 bis 4.5	14 12 6 59	10 35	3 36	+20 11	−32

Frühlings-punkts-Orts-Zeit	Ost-Stern P	Ost-Stern p	Ost-Stern q	West-Stern P	West-Stern p	West-Stern q	Grenzen in Breite
9h 2m	65° 40′	9.940	0.248	65° 29′	9.958	0.337n	− 1° + 50°
9 22	66 42	9.958	0.333	64 24	9.941	0.252n	
9 5	114 2	9.857	0.016	113 21	9.890	0.090n	− 71 + 24
9 25	112 16	9.888	0.086	115 10	9.859	0.020n	
9 7	34 4	9.609	9.648	43 23	9.651	9.699n	+ 14 + 86
9 27	42 19	9.658	9.708	35 4	9.599	9.637n	
9 15	4 49	9.816	9.938	10 50	9.814	9.933n	+ 24 + 90
9 35	10 28	9.822	9.948	4 59	9.807	9.923n	
9 16	112 59	9.875	0.055	110 55	9.903	0.125n	− 65 + 21
9 36	111 28	9.904	0.127	112 25	9.874	0.053n	
9 17	129 12	9.786	9.887	125 15	9.821	9.947n	− 90 + 19
9 37	125 32	9.822	9.948	128 54	9.784	9.885n	
9 19	90 18	9.659	9.710	90 41	9.726	9.799n	− 47 + 47
9 39	90 15	9.726	9.799	90 48	9.659	9.710n	
9 21	90 18	9.667	9.720	92 20	9.733	9.808n	− 48 + 46
9 41	90 15	9.732	9.807	92 42	9.668	9.721n	
9 22	110 28	9.725	9.796	106 27	9.775	9.869n	− 71 + 35
9 42	108 4	9.777	9.873	108 41	9.721	9.792n	
9 23	112 16	9.862	0.026	111 24	9.894	0.100n	− 69 + 26
9 43	110 41	9.893	0.097	113 2	9.863	0.029n	
9 29	359 50	9.720	9.790	352 7	9.724	9.795n	+ 38 + 90
9 49	352 7	9.724	9.796	359 50	9.720	9.789n	
9 34	120 20	9.887	0.082	119 23	9.913	0.155n	− 69 + 10
9 54	118 27	9.912	0.151	121 18	9.888	0.087n	
9 47	136 37	9.570	9.602	130 3	9.640	9.686n	− 74 − 13
10 7	128 51	9.634	9.678	137 50	9.579	9.612n	
9 49	14 19	9.828	9.960	19 12	9.843	9.987n	+ 12 + 90
10 9	19 27	9.840	9.982	14 8	9.831	9.965n	
9 51	14 30	9.758	9.844	21 36	9.768	9.859n	+ 18 + 90
10 11	21 8	9.774	9.868	14 50	9.751	9.834n	
9 55	105 44	9.529	9.556	104 22	9.622	9.664n	− 35 + 9
10 15	102 43	9.620	9.661	107 44	9.533	9.560n	
9 56	79 15	9.935	0.227	79 29	9.955	0.317n	− 17 + 37
10 16	79 44	9.955	0.316	78 59	9.935	0.227n	
10 3	346 18	9.734	9.809	354 3	9.722	9.793n	+ 50 + 90
10 23	354 5	9.724	9.795	346 14	9.732	9.807n	
10 7	117 30	9.926	0.195	117 26	9.947	0.277n	− 57 + 2
10 27	116 11	9.946	0.273	118 48	9.927	0.200n	
10 12	20 20	9.719	9.789	28 21	9.735	9.810n	+ 15 + 90
10 32	27 30	9.743	9.823	21 1	9.709	9.775n	
10 23	130 23	9.834	9.970	127 15	9.864	0.030n	− 90 + 19
10 43	127 15	9.864	0.030	130 23	9.934	9.970n	
10 25	57 2	9.791	9.895	58 41	9.833	9.968n	− 26 + 90
10 45	60 7	9.829	9.961	55 32	9.796	9.903n	

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
154	ζ Bootis m. ξ Gemin.	3.3 3.6	14ʰ 37ᵐ 6 40	10ʰ 39ᵐ	3ʰ 58ᵐ	+13° 33′	+34′
155	α Librae α Canis maj.	2.3 1	14 46 6 41	10 44	4 2	−16 8	+28
156	ε Virginis α Cancri	2.6 4.0	12 58 8 54	10 56	2 2	+11 49	−23
157	δ Bootis ϑ Geminor.	3.0 3.3	15 12 6 47	10 59	4 12	+33 52	−13
158	β Serpentis γ Geminor.	3.3 2.3	15 42 6 33	11 7	4 35	+16 5	−23
159	ε Scorpii N. α Columb. N.	2.2 2.7	16 44 5 36	11 10	5 34	−34 8	0
160	η Bootis δ Cancri	3.0 4.0	13 50 8 40	11 15	2 35	+18 40	+11
161	γ Scorpii ξ Argus N.	3.2 3.4	14 59 7 45	11 22	3 37	−24 47	− 9
162	β Serpentis λ Gemin.	3.3 3.8	15 42 7 13	11 27	4 15	+16 12	−30
163	γ Scorpii ι Navis	3.4 3.0	14 59 8 4	11 31	3 28	−24 29	−26
164	[γ Serpentis] N. λ Gemin.	3.6 3.8	15 52 7 13	11 33	4 20	+16 20	−22
165	ε Serpentis α Canis min.	3.3 1	15 46 7 35	11 40	4 6	+ 5 6	−21
166	δ Herculis ε Geminor.	3.0 3.3	17 11 6 38	11 55	5 16	+25 5	− 8
167	τ Scorpii N. η Can. maj. N.	2.9 2.4	16 30 7 21	11 55	4 35	−28 35	+33
168	ζ Herculis N. α Geminor.	2.6 2	16 38 7 29	12 3	4 35	+31 56	−10
169	μ Serpentis Br. 1197	3.3 3.6	15 45 8 21	12 3	3 42	− 3 23	+14
170	α Serpentis [ε Hydrae] N.	2.3 3.3	15 40 8 42	12 11	3 29	+ 6 44	− 1
171	α Serpentis ζ Hydrae	2.3 3.3	15 40 8 51	12 15	3 25	+ 6 30	+13
172	δ Ophiuchi Br. 1197	3.0 3.6	16 10 8 21	12 15	3 54	− 3 32	+ 4
173	ε Ophiuchi Br. 1197	3.3 3.6	16 14 8 21	12 17	3 56	− 4 3	−26
174	β Librae α Hydrae	2.0 2.0	15 12 9 23	12 18	2 54	− 8 40	−23
175	δ Herculis κ Geminor.	3.0 3.6	17 11 7 39	12 25	4 46	+24 47	+10

Frühlings-punkts-Orts-Zeit	Ost-Stern			West-Stern			Grenzen in Breite	
	P	*p*	*q*	*P*	*p*	*q*		
10h 29m	61° 46′	9.712	9.779	67° 0′	9.760	9.847*n*	−25°	+77°
10 49	65 10	9.764	9.853	63 46	9.706	9.771*n*		
10 34	121 47	9.710	9.776	119 25	9.765	9.854*n*	−82	+21
10 54	117 57	9.761	9.848	123 22	9.715	9.784*n*		
10 46	76 26	9.927	0.199	76 14	9.949	0.287*n*	−15	+43
11 6	77 5	9.948	0.285	75 32	9.928	0.201*n*		
10 49	31 48	9.814	9.934	35 58	9.840	9.982*n*	−3	+90
11 9	36 23	9.838	9.977	31 24	9.817	9.939*n*		
10 57	48 55	9.615	9.655	53 47	9.681	9.738*n*	−1	+78
11 17	55 9	9.675	9.730	47 29	9.623	9.665*n*		
11 0	174 7	9.751	9.835	167 0	9.760	9.848*n*	−90	−28
11 20	167 0	9.760	9.848	174 7	9.751	9.834*n*		
11 5	65 33	9.892	0.096	67 28	9.918	0.168*n*	−17	+66
11 25	67 2	9.918	0.169	66 0	9.892	0.095*n*		
11 12	130 13	9.815	9.935	126 28	9.846	9.993*n*	−90	+21
11 32	126 51	9.847	9.995	129 50	9.813	9.933*n*		
11 17	55 12	9.676	9.731	58 8	9.736	9.812*n*	−15	+81
11 37	59 47	9.731	9.805	53 26	9.683	9.741*n*		
11 21	128 36	9.830	9.962	124 25	9.858	0.017*n*	−90	+22
11 41	125 32	9.861	0.023	127 27	9.826	9.955*n*		
11 23	53 20	9.663	9.715	57 3	9.723	9.794*n*	−12	+80
11 43	58 18	9.719	9.788	52 0	9.669	9.722*n*		
11 30	79 17	9.648	9.696	79 30	9.718	9.787*n*	−34	+56
11 50	80 51	9.716	9.785	77 43	9.650	9.699*n*		
11 45	17 25	9.645	9.693	26 10	9.677	9.732*n*	+26	+90
12 5	26 28	9.673	9.727	17 12	9.649	9.698*n*		
11 45	148 50	9.740	9.818	144 7	9.779	9.876*n*	−90	−3
12 5	142 52	9.770	9.863	149 59	9.750	9.832*n*		
11 53	27 35	9.774	9.868	32 51	9.801	9.912*n*	+4	+90
12 13	33 10	9.799	9.908	27 17	9.776	9.872*n*		
11 53	95 56	9.726	9.799	95 59	9.781	9.880*n*	−58	+47
12 13	95 14	9.781	9.879	96 47	9.727	9.799*n*		
12 1	78 29	9.767	9.858	79 37	9.815	9.935*n*	−44	+67
12 21	79 41	9.815	9.935	78 25	9.767	9.858*n*		
12 5	78 47	9.778	9.875	80 32	9.823	9.950*n*	−46	+68
12 25	79 54	9.824	9.951	79 28	9.778	9.874*n*		
12 5	97 8	9.687	9.746	96 27	9.749	9.831*n*	−57	+42
12 25	96 11	9.749	9.831	97 26	9.688	9.746*n*		
12 7	99 19	9.682	9.740	96 32	9.743	9.823*n*	−56	+41
12 27	98 5	9.744	9.824	97 33	9.681	9.738*n*		
12 8	102 57	9.847	9.994	100 55	9.880	0.067*n*	−63	+37
12 28	101 56	9.881	0.069	101 50	9.846	9.992*n*		
12 15	30 36	9.690	9.750	37 58	9.723	9.794*n*	+8	+90
12 35	37 34	9.726	9.798	30 58	9.687	9.745*n*		

Tafel Ia.

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
176	ϑ Ophiuchi ξ Argus N.	3.4 3.4	17ʰ 16ᵐ 7 45	12ʰ 31ᵐ	4ʰ 45ᵐ	− 24° 26′	− 8′
177	ϰ Ophiuchi β Cancri	3.3 3.6	16 53 8 12	12 33	4 21	+ 9 29	+ 2
178	ϑ Ophiuchi ι Navis	3.4 3.0	17 16 8 4	12 40	4 36	− 24 28	− 26
179	μ Herculis β Geminor.	3.3 1.3	17 43 7 40	12 41	5 2	+ 28 0	− 14
180	α Librae [ν Hydrae] N.	2.3 3.3	14 46 10 45	12 46	2 0	− 15 42	+ 2
181	ι¹ Scorpii N. ζ Argus N.	3.3 2.5	17 41 8 0	12 51	4 50	− 39 55	− 10
182	o Herculis β Geminor.	3.8 1.3	18 4 7 40	12 52	5 12	+ 28 30	+ 15
183	δ Bootis [46 Leon.min.] A.	3.0 4.0	15 12 10 48	13 0	2 12	+ 34 10	− 31
184	λ Sagittar. N. ξ Argus N.	3.1 3.4	18 22 7 45	13 4	5 18	− 25 3	− 25
185	ϰ Ophiuchi [o Leonis] N.	3.3 3.6	16 53 9 36	13 15	3 39	+ 9 54	− 24
186	δ Herculis ε Leonis	3.0 3.0	17 11 9 41	13 26	3 45	+ 24 34	+ 23
187	β Serpentis ϑ Leonis	3.3 3.3	15 42 11 10	13 26	2 16	+ 15 49	− 7
188	[γ Serpentis] N. ϑ Leonis	3.6 3.3	15 52 11 10	13 31	2 21	+ 15 56	+ 1
189	δ Scorpii β Crateris	2.3 4.0	15 55 11 7	13 31	2 24	− 22 21	− 1
190	ϰ Ophiuchi [ρ Leonis] N.	3.3 4.0	16 53 10 28	13 41	3 13	+ 9 38	− 8
191	δ Herculis ζ Leonis	3.0 3.0	17 11 10 12	13 42	3 30	+ 24 24	+ 32
192	β Serpentis β Leonis	3.3 2.0	15 42 11 44	13 43	1 59	+ 15 23	+ 19
193	α Ophiuchi α Leonis	2.0 1.3	17 31 10 4	13 47	3 44	+ 12 31	+ 7
194	β Herculis δ Leonis	2.3 2.3	16 26 11 9	13 48	2 39	+ 21 21	+ 20
195	[γ Serpentis] N. β Leonis	3.6 2.0	15 52 11 44	13 48	2 4	+ 15 31	+ 26
196	72 Ophiuchi [o Leonis] N.	3.3 3.6	18 3 9 36	13 50	4 13	+ 9 56	− 23
197	η Ophiuchi [ν Hydrae] N.	2.3 3.3	17 5 10 45	13 55	3 10	− 15 40	+ 3

Frühlings-punkts-Orts-Zeit	Ost-Stern *P*	Ost-Stern *p*	Ost-Stern *q*	West-Stern *P*	West-Stern *p*	West-Stern *q*	Grenzen in Breite
12h 21m	149° 7′	9.691	9.751	141° 50′	9.724	9.796*n*	−90° −8°
12 41	142 11	9.727	9.800	148 47	9.688	9.747*n*	
12 23	66 9	9.612	9.651	70 1	9.682	9.739*n*	−17 +63
12 43	69 55	9.682	9.740	66 16	9.611	9.651*n*	
12 30	145 48	9.707	9.772	138 20	9.737	9.814*n*	−90 −2
12 50	139 28	9.744	9.823	144 44	9.698	9.760*n*	
12 31	21 43	9.700	9.763	28 42	9.732	9.807*n*	+15 +90
12 51	29 11	9.727	9.800	21 20	9.706	9.771*n*	
12 36	108 25	9.932	0.217	107 37	9.952	0.303*n*	−46 +9
12 56	107 34	9.952	0.303	108 28	9.932	0.217*n*	
12 41	163 2	9.828	9.960	157 45	9.839	9.980*n*	−90 −9
13 1	158 0	9.842	9.985	162 50	9.826	9.955*n*	
12 42	16 43	9.701	9.764	24 57	9.718	9.787*n*	+21 +90
13 2	24 30	9.723	9.794	17 2	9.695	9.756*n*	
12 50	50 45	9.942	0.259	51 13	9.959	0.339*n*	+14 +64
13 10	52 20	9.957	0.332	49 38	9.944	0.266*n*	
12 54	163 56	9.651	9.699	154 4	9.666	9.718*n*	−90 −28
13 14	154 55	9.677	9.732	163 20	9.639	9.684*n*	
13 5	72 50	9.748	9.830	73 30	9.799	9.909*n*	−39 +72
13 25	74 44	9.798	9.906	71 29	9.750	9.833*n*	
13 16	48 4	9.800	9.910	52 44	9.830	9.963*n*	−19 +90
13 36	51 46	9.834	9.969	49 3	9.796	9.904*n*	
13 16	70 42	9.913	0.155	71 29	9.937	0.235*n*	−14 +51
13 36	71 44	9.936	0.234	70 27	9.914	0.156*n*	
13 21	70 6	9.907	0.136	71 15	9.931	0.214*n*	−15 +53
13 41	71 12	9.931	0.214	70 8	9.907	0.136*n*	
13 21	117 44	9.913	0.153	116 13	9.934	0.227*n*	−60 +7
13 41	116 16	9.934	0.227	117 41	9.913	0.153*n*	
13 31	75 11	9.811	9.928	76 10	9.851	0.003*n*	−45 +75
13 51	76 31	9.850	0.002	74 48	9.811	9.929*n*	
13 32	51 0	9.826	9.955	55 29	9.854	0.008*n*	−23 +90
13 52	54 8	9.857	0.016	52 23	9.821	9.947*n*	
13 33	71 38	9.934	0.224	73 9	9.953	0.308*n*	−10 +45
13 53	72 27	9.953	0.310	72 21	9.933	0.222*n*	
13 37	66 52	9.745	9.825	69 45	9.793	9.899*n*	−33 +76
13 57	69 25	9.793	9.899	67 14	9.744	9.824*n*	
13 38	61 48	9.893	0.098	64 16	9.917	0.166*n*	−11 +64
13 58	63 29	9.918	0.169	62 37	9.892	0.095*n*	
13 38	71 5	9.928	0.204	72 58	9.948	0.285*n*	−11 +46
13 58	71 59	9.949	0.287	72 6	9.927	0.201*n*	
13 40	67 39	9.640	9.686	69 32	9.709	9.775*n*	−23 +65
14 0	70 57	9.706	9.771	66 3	9.644	9.691*n*	
13 45	113 30	9.829	9.961	111 42	9.865	0.032*n*	−81 +35
14 5	111 34	9.865	0.031	113 39	9.830	9.962*n*	

Tafel Ia.

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
198	δ Scorpii	2.3	15^h 55^m	14^h 0^m	1^h 55^m	−22° 15′	− 7′
	ε Corvi	3.0	12 5				
199	[λ Ophiuchi] N.	3.7	16 26	14 6	2 20	+ 2 14	− 3
	β Virginis	3.3	11 46				
200	ξ Serpentis	3.6	17 32	14 9	3 24	−15 32	+11
	[ν Hydrae] N.	3.3	10 45				
201	72 Ophiuchi	3.3	18 3	14 16	3 48	+ 9 40	− 7
	[ρ Leonis] N.	4.0	10 28				
202	ξ Serpentis	3.6	17 32	14 24	3 9	−14 49	−32
	δ Crateris	3.3	11 15				
203	α Herculis	3.2 bis 4.0	17 11	14 28	2 43	+14 47	−17
	β Leonis	2.0	11 44				
204	γ Gruis N.	3.0	21 48	14 31	7 17	−37 22	−26
	π Argus N.	2.7	7 14				
205	109 Herculis	4.0	18 20	14 45	3 35	+21 22	+21
	δ Leonis	2.3	11 9				
206	[γ Ophiuchi]	3.6	17 43	14 45	2 59	+ 2 30	+14
	β Virginis	3.3	11 46				
207	η Ophiuchi	2.3	17 5	14 45	2 20	−15 49	+12
	δ Corvi	2.3	12 25				
208	110 Herculis	4.0	18 42	14 56	3 46	+20 44	−16
	δ Leonis	2.3	11 9				
209	ε Cygni	2.6	20 43	14 59	5 43	+34 12	−34
	40 Lyncis	3.3	9 16				
210	ξ Serpentis	3.6	17 32	14 59	2 34	−15 41	+20
	δ Corvi	2.3	12 25				
211	γ Lyrae	3.3	18 56	15 5	3 51	+33 4	−30
	ν Ursae maj.	3.3	11 14				
212	μ Sagittarii	4.0	18 8	15 7	3 1	−21 36	+31
	ε Corvi	3.0	12 5				
213	α Ophiuchi	2.0	17 31	15 14	2 17	+12 2	+35
	ε Virginis	2.6	12 58				
214	β Ophiuchi	3.0	17 39	15 15	2 24	+ 4 15	+22
	δ Virginis	3.0	12 51				
215	67 Ophiuchi	4.0	17 56	15 24	2 33	+ 3 25	−28
	δ Virginis	3.0	12 51				
216	δ Aquilae	3.3	19 21	15 33	3 47	+ 2 36	+20
	β Virginis	3.3	11 46				
217	π Sagittarii	3.1	19 4	15 35	3 29	−21 39	+29
	ε Corvi	3.0	12 5				
218	ν Ophiuchi	3.6	17 54	15 37	2 17	−10 14	+28
	α Virginis	1	13 20				
219	α Lyrae	1	18 34	15 43	2 51	+38 45	− 3
	12 Can. ven. sq.	2.9	12 52				

Frühlingspunkts-Orts-Zeit	Ost-Stern *R*	Ost-Stern *p*	Ost-Stern *q*	West-Stern *P*	West-Stern *p*	West-Stern *q*	Grenzen in Breite	
13h 50m	115° 41′	9.943	0.263	114° 22′	9.960	0.349n	−50°	0°
14 10	114 38	9.960	0.350	115 25	9.943	0.262n		
13 56	87 15	9.899	0.115	87 18	9.926	0.196n	−34	+38
14 16	87 25	9.926	0.195	87 8	9.899	0.115n		
13 59	114 43	9.801	9.912	112 59	9.841	9.984n	−83	+35
14 19	112 27	9.840	9.982	115 16	9.802	9.914n		
14 6	71 43	9.724	9.795	73 32	9.777	9.874n	−36	+71
14 26	73 53	9.777	9.873	71 20	9.724	9.796n		
14 14	112 59	9.831	9.964	109 43	9.864	0.031n	−78	+35
14 34	111 7	9.866	0.035	111 30	9.828	9.960n		
14 18	70 28	9.874	0.052	71 4	9.904	0.127n	−23	+63
14 38	71 47	9.903	0.125	69 42	9.875	0.054n		
14 21	205 36	9.832	9.967	201 3	9.809	9.925n	−90	−54
14 41	200 26	9.815	9.937	206 18	9.826	9.956n		
14 35	54 18	9.802	9.914	58 25	9.835	9.973n	−25	+90
14 55	57 28	9.838	9.978	55 17	9.799	9.909n		
14 35	85 58	9.833	9.968	86 56	9.870	0.044n	−52	+59
14 55	86 18	9.870	0.044	86 40	9.833	9.968n		
14 35	109 24	9.909	0.140	108 48	9.933	0.220n	−53	+15
14 55	108 20	9.932	0.218	109 53	9.909	0.142n		
14 46	54 2	9.775	9.870	56 47	9.816	9.939n	−22	+90
15 6	57 34	9.814	9.934	53 14	9.777	9.874n		
14 49	2 26	9.744	9.824	9 26	9.762	9.850n	+31	+90
15 9	9 50	9.750	9.832	2 20	9.756	9.842n		
14 49	109 57	9.889	0.089	109 31	9.917	0.166n	−59	+19
15 9	108 43	9.916	0.164	110 48	9.890	0.092n		
14 55	37 51	9.834	9.969	40 38	9.863	0.027n	− 5	+90
15 15	41 44	9.858	0.018	36 47	9.839	9.980n		
14 57	119 55	9.858	0.018	119 1	9.890	0.091n	−77	+17
15 17	117 45	9.888	0.085	121 14	9.861	0.024n		
15 4	74 24	9.910	0.145	76 38	9.933	0.222n	−19	+48
15 24	75 16	9.934	0.225	75 51	9.909	0.142n		
15 5	84 7	9.894	0.102	85 21	9.922	0.181n	−33	+43
15 25	84 29	9.922	0.181	85 2	9.894	0.101n		
15 14	86 8	9.881	0.067	85 13	9.910	0.146n	−38	+45
15 34	86 23	9.910	0.145	84 53	9.881	0.068n		
15 23	84 15	9.709	9.775	86 6	9.766	9.856n	−47	+57
15 43	84 58	9.766	9.857	85 33	9.708	9.774n		
15 25	123 56	9.811	9.928	122 14	9.849	9.999n	−90	+26
15 45	120 59	9.846	9.993	125 14	9.815	9.935n		
15 27	102 7	9.907	0.137	102 31	9.933	0.220n	−46	+22
15 47	101 26	9.932	0.218	103 15	9.908	0.139n		
15 33	41 18	9.920	0.176	43 30	9.936	0.234n	+16	+78
15 53	43 37	9.936	0.234	41 11	9.920	0.177n		

Tafel Ia.

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
220	γ Aquilae	3.0	19^h 42^m	15^h 51^m	3^h 51^m	+ 9° 49′	+ 35′
	ο Virginis	4.0	12 1				
221	ε Cygni	2.6	20 43	15 58	4 44	+ 33 37	+ 1
	ν Ursae maj.	3.3	11 14				
222	[η Aquilae]	3.5 bis 4.7	19 48	16 2	3 46	+ 0 18	+ 28
	η Virginis	3.3	12 15				
223	δ Aquilae	3.3	19 21	16 6	3 15	+ 3 25	− 29
	δ Virginis	3.0	12 51				
224	β Delphini	3.3	20 33	16 9	4 24	+ 14 41	− 24
	β Leonis	2.0	11 44				
225	α Delphini	3.6	20 35	16 10	4 25	+ 15 20	+ 16
	β Leonis	2.0	11 44				
226	ϑ Aquilae	3.0	20 7	16 11	3 56	− 0 38	− 28
	η Virginis	3.3	12 15				
227	γ Aquilae	3.0	19 42	16 20	3 22	+ 10 55	− 31
	ε Virginis	2.6	12 58				
228	[β Capric.] N.	3.0	20 16	16 21	3 55	− 15 32	+ 28
	δ Corvi	2.3	12 25				
229	ϑ Aquilae	3.0	20 7	16 22	3 45	− 1 1	− 4
	[γ Virgin.m.] N.	3	12 37				
230	α Lyrae	1	18 34	16 31	2 3	+ 38 42	0
	γ Bootis	2.9	14 28				
231	λ Aquilae	3.1	19 1	16 36	2 25	− 5 18	+ 17
	ι Virginis	4.0	14 11				
232	[η Aquilae]	3.5 bis 4.7	19 48	16 39	3 9	+ 0 19	+ 27
	ζ Virginis	3.3	13 30				
233	ε Delphini	4.0	20 29	16 43	3 46	+ 11 13	− 13
	ε Virginis	2.6	12 58				
234	ϑ Aquilae	3.0	20 7	16 48	3 18	− 0 37	− 29
	ζ Virginis	3.3	13 30				
235	ζ Aquilae	3.0	19 1	16 49	2 12	+ 13 55	12
	ζ Bootis m.	3.3	14 37				
236	λ Aquilae	3.1	19 1	16 50	2 12	− 5 9	+ 7
	μ Virginis	4.0	14 38				
237	γ Sagittae	3.6	19 55	16 53	3 2	+ 19 3	+ 12
	η Bootis	3.0	13 50				
238	ζ Capricorni	3.8	21 22	16 56	4 26	− 22 51	+ 3
	β Corvi	2.3	12 30				
239	ε Aquarii	3.6	20 43	17 2	3 41	− 10 16	+ 26
	α Virginis	1	13 20				
240	δ Aquilae	3.3	19 21	17 1	2 20	+ 2 36	+ 20
	109 Virginis	3.6	14 42				
241	γ Sagittae	3.6	19 55	17 3	2 52	+ 19 27	− 12
	α Bootis	1	14 12				

Frühlings-punkts-Orts-Zeit	Ost-Stern P	Ost-Stern p	Ost-Stern q	West-Stern P	West-Stern p	West-Stern q	Grenzen in Breite
15h 41m	69° 46′	9.717	9.786	74° 6′	9.768	9.859n	−34° +71°
16 1	72 12	9.771	9.864	71 54	9.713	9.780n	
15 48	22 58	9.779	9.877	28 46	9.800	9.910n	+8 +90
16 8	28 43	9.800	9.911	23 1	9.779	9.876n	
15 52	88 30	9.711	9.778	90 17	9.768	9.860n	−52 +52
16 12	88 41	9.768	9.860	90 19	9.711	9.778n	
15 56	85 19	9.798	9.906	84 23	9.841	9.983n	−54 +63
16 16	85 46	9.841	9.982	83 48	9.798	9.907n	
15 59	55 5	9.635	9.679	58 47	9.701	9.764n	−10 +77
16 19	60 12	9.696	9.757	53 34	9.641	9.687n	
16 0	52 15	9.642	9.689	58 33	9.698	9.760n	−10 +77
16 20	57 38	9.701	9.764	53 14	9.638	9.683n	
16 1	92 16	9.680	9.736	90 18	9.743	9.822n	−50 +46
16 21	91 58	9.743	9.822	90 21	9.680	9.736n	
16 10	73 2	9.791	9.896	73 9	9.836	9.973n	−41 +75
16 30	74 40	9.834	9.969	71 24	9.794	9.900n	
16 11	119 18	9.725	9.797	117 23	9.778	9.875n	−81 +24
16 31	115 54	9.774	9.869	120 54	9.730	9.804n	
16 12	92 6	9.716	9.784	91 37	9.772	9.866n	−53 +50
16 32	91 50	9.772	9.866	91 50	9.716	9.784n	
16 21	46 15	9.956	0.326	47 44	9.968	0.402n	+21 +65
16 41	47 44	9.968	0.402	46 15	9.956	0.326n	
16 26	96 26	9.893	0.098	96 42	9.921	0.178n	−44 +32
16 46	96 2	9.920	0.177	97 8	9.893	0.099n	
16 29	88 48	9.811	9.928	90 12	9.852	0.004n	−60 +60
16 49	88 55	9.852	0.004	90 13	9.811	9.928n	
16 33	69 23	9.734	9.809	71 2	9.786	9.887n	−34 +72
16 53	71 44	9.785	9.885	68 36	9.735	9.811n	
16 38	91 46	9.789	9.892	90 12	9.833	9.969n	−59 +56
16 58	91 36	9.833	9.969	90 13	9.789	9.892n	
16 39	73 17	9.917	0.165	73 43	9.940	0.247n	−15 +48
16 59	74 10	9.939	0.246	72 50	9.917	0.166n	
16 40	96 9	9.912	0.151	96 6	9.936	0.234n	−39 +27
17 0	95 49	9.936	0.234	96 27	9.912	0.151n	
16 43	62 26	9.852	0.006	64 58	9.883	0.072n	−24 +75
17 3	64 28	9.883	0.074	62 57	9.852	0.004n	
16 46	139 32	9.707	9.772	133 56	9.749	9.831n	−90 +3
17 6	133 47	9.748	9.830	139 41	9.708	9.773n	
16 52	108 0	9.742	9.821	107 20	9.794	9.901n	−72 +38
17 12	105 59	9.792	9.897	109 30	9.745	9.825n	
16 51	86 18	9.900	0.117	87 19	9.927	0.198n	−33 +38
17 11	86 31	9.927	0.198	87 8	9.900	0.117n	
16 53	63 34	9.869	0.042	64 53	9.899	0.113n	−18 +70
17 13	65 22	9.898	0.111	63 2	9.870	0.044n	

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
242	ζ Capricorni	3.8	21^h 22^m	17^h 18^m	4^h 4^m	− 22° 45′	− 3′
	γ Hydrae	3.2	13 14				
243	β Cygni	3.0	19 27	17 29	1 58	+ 27 24	+ 23
	α Coron. bor.	2.0	15 31				
244	[β Capric.] N.	3.0	20 16	17 31	2 45	− 15 22	+ 18
	α Librae	2.3	14 46				
245	β Cygni	3.0	19 27	17 33	1 54	+ 27 10	+ 36
	[γ Coron. bor.]	3.8	15 39				
246	β Delphini	3.3	20 33	17 35	2 58	+ 14 12	+ 5
	ζ Bootis m.	3.3	14 37				
247	α Aquarii	3.0	22 1	17 46	4 16	− 0 27	− 19
	ζ Virginis	3.3	13 30				
248	ζ Cygni	3.0	21 9	17 49	3 21	+ 30 19	− 27
	ρ Bootis	3.6	14 28				
249	β Aquarii	3.0	21 27	17 49	3 38	− 5 46	− 12
	ι Virginis	4.0	14 11				
250	ε Cygni	2.6	20 43	17 57	2 45	+ 33 38	0
	δ Bootis	3.0	15 12				
251	ε Aquarii	3.6	20 43	17 57	2 45	− 9 26	− 23
	β Librae	2.0	15 12				
252	η Aquarii	3.8	22 31	18 0	4 30	− 0 22	− 13
	ζ Virginis	3.3	13 30				
253	β Aquarii	3.0	21 27	18 3	3 24	− 5 37	− 21
	μ Virginis	4.0	14 38				
254	γ Sagittae	3.6	19 55	18 6	1 48	+ 19 18	− 3
	γ Herculis	3.1	16 18				
255	α Delphini	3.6	20 35	18 9	2 27	+ 15 39	− 3
	β Serpentis	3.3	15 42				
256	δ Capricorni	3.0	21 42	18 14	3 28	− 16 6	− 26
	α Librae	2.3	14 46				
257	α Delphini	3.6	20 35	18 14	2 22	+ 15 46	− 11
	[γ Serpentis] N.	3.6	15 52				
258	ζ Cygni	3.0	21 9	18 17	2 52	+ 29 38	+ 13
	β Coron. bor.	3.8	15 24				
259	α Equulei	4.0	21 11	18 29	2 42	+ 4 49	+ 4
	ε Serpentis	3.3	15 46				
260	γ Cygni	2.4	20 19	18 29	1 50	+ 39 32	+ 26
	η Herculis	3.1	16 40				
261	η Pegasi	3.0	22 39	18 33	4 5	+ 30 15	− 30
	ρ Bootis	3.6	14 28				
262	ε Aquarii	3.6	20 43	18 37	2 5	− 10 6	+ 17
	ζ Ophiuchi	2.6	16 32				
263	δ Aquarii	3.0	22 50	18 48	4 2	− 15 59	− 19
	α Librae	2.3	14 46				

Frühlings-punkts-Orts-Zeit	Ost-Stern *P*	Ost-Stern *p*	Ost-Stern *q*	West-Stern *P*	West-Stern *p*	West-Stern *q*	Grenzen in Breite
17^h 8^m	133° 14′	9.753	9.836	128° 38′	9.791	9.896*n*	−90° +13°
17 28	128 46	9.792	9.896	133 5	9.752	9.835*n*	
17 19	58 10	9.946	0.275	60 12	9.961	0.354*n*	+ 6 +55
17 39	59 25	9.962	0.357	58 58	9.945	0.271*n*	
17 21	110 26	9.872	0.047	109 47	9.902	0.122*n*	−64 +25
17 41	109 3	9.901	0.120	111 13	9.873	0.049*n*	
17 23	58 26	9.949	0.291	60 54	9.964	0.370*n*	+ 6 +53
17 43	59 38	9.965	0.376	59 44	9.948	0.285*n*	
17 25	69 31	9.848	9.997	71 18	9.881	0.068*n*	−32 +71
17 45	71 5	9.881	0.069	69 44	9.848	9.997*n*	
17 36	91 53	9.603	9.641	90 17	9.680	9.737*n*	−40 +36
17 56	91 35	9.680	9.737	90 20	9.603	9.641*n*	
17 39	46 35	9.860	0.022	48 32	9.888	0.085*n*	− 6 +90
17 59	49 34	9.885	0.078	45 33	9.864	0.029*n*	
17 39	100 51	9.742	9.821	99 0	9.793	9.899*n*	−64 +44
17 59	99 38	9.794	9.900	100 8	9.741	9.820*n*	
17 47	47 19	9.912	0.151	49 29	9.931	0.213*n*	+ 8 +75
18 7	49 30	9.931	0.213	47 18	9.912	0.151*n*	
17 47	103 30	9.864	0.030	101 33	9.895	0.103*n*	−58 +34
18 7	102 32	9.896	0.105	102 27	9.863	0.028*n*	
17 50	91 42	9.533	9.559	90 19	9.625	9.667*n*	−28 +26
18 10	91 23	9.625	9.667	90 24	9.532	9.559*n*	
17 53	99 59	9.778	9.875	97 56	9.823	9.950*n*	−66 +48
18 13	98 59	9.824	9.951	98 49	9.777	9.873*n*	
17 56	68 8	9.947	0.278	68 52	9.964	0.369*n*	− 3 +44
18 16	69 0	9.964	0.369	68 0	9.947	0.278*n*	
17 59	70 12	9.900	0.115	71 14	9.925	0.192*n*	−17 +56
18 19	71 22	9.925	0.192	70 4	9.900	0.116*n*	
18 4	117 5	9.796	9.903	113 22	9.833	9.968*n*	−83 +33
18 24	114 35	9.835	9.973	115 47	9.793	9.898*n*	
18 4	70 31	9.907	0.135	71 12	9.931	0.213*n*	−16 +54
18 24	71 37	9.931	0.212	70 5	9.907	0.136*n*	
18 7	50 37	9.895	0.102	53 24	9.916	0.162*n*	0 +77
18 27	52 54	9.917	0.165	51 8	9.894	0.099*n*	
18 19	83 20	9.865	0.031	83 58	9.897	0.108*n*	−39 +52
18 39	83 49	9.897	0.108	83 30	9.865	0.031*n*	
18 19	45 58	9.966	0.384	48 8	9.976	0.461*n*	+24 +61
18 39	47 16	9.976	0.467	46 51	9.965	0.377*n*	
18 23	37 38	9.797	9.905	40 59	9.831	9.964*n*	− 8 +90
18 43	42 8	9.826	9.955	36 30	9.804	9.916*n*	
18 27	101 47	9.922	0.183	101 49	9.945	0.269*n*	−41 +18
18 47	101 11	9.944	0.268	102 26	9.923	0.184*n*	
18 38	122 47	9.715	9.783	117 53	9.761	9.849*n*	−82 +21
18 58	118 53	9.764	9.854	121 42	9.711	9.778*n*	

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
264	α Pegasi ζ Bootis m.	2.0 3.3	23h 0m 14 37	18h 49m	4h 12m	+ 14° 25′	+ 18′
265	ϑ Pegasi α Serpentis	3.3 2.3	22 6 15 40	18 53	3 13	+ 6 14	− 29
266	ϑ Pegasi ε Serpentis	3.3 3.3	22 6 15 46	18 56	3 10	+ 5 15	+ 30
267	λ Aquarii β Librae	4.0 2.0	22 48 15 12	19 0	3 48	− 8 33	+ 30
268	η Pegasi β Coron. bor.	3.0 3.8	22 39 15 24	19 1	3 37	+ 29 35	+ 10
269	β Pegasi α Coron. bor.	2.2 bis 2.7 2.0	22 59 15 31	19 15	3 44	+ 27 18	+ 17
270	ε Pegasi κ Ophiuchi	2.3 3.3	21 40 16 53	19 17	2 23	+ 9 29	− 2
271	β Pegasi [γ Coron. bor.]	2.2 bis 2.7 3.8	22 59 15 39	19 19	3 40	+ 27 5	+ 30
272	α Pegasi β Serpentis	2.0 3.3	23 0 15 42	19 21	3 39	+ 15 13	− 29
273	δ Capric. η Ophiuchi	3.0 2.3	21 42 17 5	19 24	2 18	− 16 5	− 28
274	c^2 Aquarii δ Scorpii	4.0 2.3	23 5 15 55	19 30	3 35	− 22 1	+ 21
275	δ Androm. ϱ Bootis	3.3 3.6	0 35 14 28	19 31	5 3	+ 30 34	− 12
276	ι Ceti β Librae	3.3 2.0	0 15 15 12	19 43	4 31	− 9 11	− 8
277	α Androm. β Coron. bor.	2.0 3.8	0 4 15 24	19 44	4 20	+ 29 0	− 25
278	ζ Pegasi κ Ophiuchi	3.3 3.3	22 37 16 53	19 45	2 52	+ 9 56	+ 25
279	ε Pegasi 72 Ophiuchi	2.3 3.3	21 40 18 3	19 51	1 48	+ 9 30	− 3
280	ϑ Pegasi β Ophiuchi	3.3 3.0	22 6 17 39	19 52	2 13	+ 5 11	+ 34
281	γ Pegasi β Serpentis	2.6 3.3	0 9 15 42	19 55	4 13	+ 15 12	− 31
282	δ Aquarii η Ophiuchi	3.0 2.3	22 50 17 5	19 58	2 52	− 15 57	− 21
283	α Pegasi α Herculis	2.0 3.2 bis 4.0	23 0 17 11	20 5	2 55	+ 14 36	+ 7
284	δ Aquarii ξ Serpentis	3.0 3.6	22 50 17 32	20 11	2 39	− 15 49	− 29
285	η Pegasi [ξ Herculis]	3.0 3.6	22 39 17 54	20 17	2 22	+ 29 30	+ 15

Frühlings-punkts-Orts-Zeit	Ost-Stern *P*	Ost-Stern − *p*	Ost-Stern *q*	West-Stern *P*	West-Stern *p*	West-Stern *q*	Grenzen in Breite
18h 39m	57° 43′	9.677	9.733	63° 0′	9.730	9.804n	− 18° + 76°
18 59	61 58	9.733	9.808	58 50	9.673	9.728n	
18 43	80 57	9.805	9.918	80 26	9.847	9.995n	− 50 + 68
19 3	81 47	9.846	9.993	79 28	9.806	9.920n	
18 46	81 6	9.812	9.930	83 19	9.852	0.004n	− 52 + 67
19 6	81 54	9.852	0.006	82 39	9.811	9.929n	
18 50	105 34	9.718	9.787	105 20	9.775	9.870n	− 67 + 38
19 10	103 41	9.772	9.866	107 24	9.721	9.791n	
18 51	43 44	9.837	9.975	47 38	9.863	0.027n	− 12 + 90
19 11	47 14	9.864	0.030	44 8	9.835	9.972n	
19 5	44 56	9.815	9.936	49 21	9.843	9.988n	− 17 + 90
19 25	48 39	9.846	9.993	45 39	9.813	9.932n	
19 7	78 1	9.898	0.112	78 40	9.925	0.191n	− 34 + 59
19 27	78 43	9.925	0.191	77 57	9.898	0.112n	
19 9	45 44	9.822	9.948	50 33	9.848	9.996n	− 18 + 90
19 29	49 19	9.852	0.004	47 0	9.817	9.939n	
19 11	64 4	9.764	9.854	65 19	9.812	9.930n	− 31 + 81
19 31	66 46	9.809	9.925	62 31	9.768	9.860n	
19 14	110 25	9.912	0.149	108 16	9.934	0.225n	− 52 + 14
19 34	109 19	9.935	0.228	109 19	9.911	0.146n	
19 20	125 32	9.803	9.915	123 18	9.841	9.983n	− 90 + 25
19 40	122 22	9.838	9.978	126 30	9.806	9.920n	
19 21	19 3	9.728	9.802	25 44	9.754	9.839n	+ 15 + 90
19 41	26 6	9.750	9.833	18 46	9.733	9.808n	
19 33	116 0	9.567	9.599	110 53	9.645	9.692n	− 55 + 9
19 53	111 28	9.646	9.693	115 20	9.566	9.597n	
19 34	35 7	9.767	9.858	39 22	9.803	9.915n	− 3 + 90
19 54	40 19	9.798	9.906	34 13	9.774	9.868n	
19 35	75 24	9.853	0.008	77 35	9.886	0.080n	− 36 + 63
19 55	76 30	9.887	0.082	76 34	9.852	0.005n	
19 41	79 9	9.941	0.254	79 31	9.960	0.347n	− 15 + 35
20 1	79 37	9.960	0.347	79 3	9.941	0.254n	
19 42	82 55	9.910	0.145	84 38	9.934	0.226n	− 27 + 39
20 2	83 18	9.935	0.227	84 20	9.910	0.144n	
19 45	57 23	9.672	9.727	60 2	9.734	9.809n	− 17 + 78
20 5	61 45	9.729	9.802	55 32	9.680	9.736n	
19 48	112 41	9.862	0.026	110 12	9.892	0.095n	− 69 + 26
20 8	111 4	9.893	0.097	111 46	9.861	0.023n	
19 55	69 12	9.855	0.011	71 2	9.886	0.082n	− 30 + 69
20 15	70 45	9.887	0.082	69 31	9.854	0.010n	
20 1	111 32	9.883	0.074	109 0	9.910	0.144n	− 62 + 21
20 21	110 9	9.911	0.147	110 19	9.882	0.071n	
20 7	54 1	9.927	0.198	56 15	9.944	0.267n	+ 5 + 64
20 27	55 42	9.945	0.269	54 34	9.926	0.195n	

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
286	γ Aquarii η Serpentis	3.4 3.0	22h 17m 18 17	20h 17m	2h 0m	− 2° 23′	+ 32′
287	β Ceti β Scorpii	2.0 2.0	0 39 16 0	20 20	4 19	− 19 1	+ 32
288	ζ Pegasi 72 Ophiuchi	3.3 3.3	22 37 18 3	20 20	2 17	+ 9 57	+ 24
289	β Pegasi μ Herculis	2.2 bis 2.7 3.3	22 59 17 43	20 21	2 38	+ 27 41	− 5
290	η Pegasi o Herculis	3.0 3.8	22 39 18 4	20 21	2 17	+ 29 15	+ 30
291	ι Ceti ζ Ophiuchi	3.3 2.6	0 15 16 32	20 24	3 51	− 9 51	+ 32
292	α Pisc. austr. γ Sagittarii	1.3 3.3	22 53 18 0	20 26	2 26	− 30 16	+ 10
293	β Pegasi o Herculis	2.2 bis 2.7 3.8	22 59 18 4	20 32	2 28	+ 28 10	− 35
294	α Pisc. austr. δ Sagittarii N.	1.3 2.8	22 53 18 15	20 34	2 19	− 29 59	− 7
295	γ Pegasi α Herculis	2.6 3.2 bis 4.0	0 9 17 11	20 40	3 29	+ 14 35	+ 6
296	[η Ceti] C. ζ Ophiuchi	3.1 2.6	1 4 16 32	20 48	4 16	− 10 31	− 8
297	α Androm. μ Herculis	2.0 3.3	0 4 17 43	20 53	3 10	+ 28 11	+ 25
298	α Pisc. austr. ζ Sagittarii N.	1.3 2.9	22 53 18 57	20 55	1 58	− 30 3	− 3
299	α Androm. [ξ Herculis]	2.0 3.6	0 4 17 54	20 59	3 5	+ 28 55	− 20
300	α Pegasi ζ Aquilae	2.0 3.0	23 0 19 1	21 1	2 0	+ 14 13	+ 30
301	ι Ceti ν Ophiuchi	3.3 3.6	0 15 17 54	21 4	3 10	− 9 33	+ 13
302	α Androm. o Herculis	2.0 3.8	0 4 18 4	21 4	3 0	+ 28 40	− 5
303	θ Eridani N. γ Lupi N.	2.6 3.2	2 55 15 29	21 12	5 43	− 40 46	+ 6
304	β Pegasi β Cygni	2.2 bis 2.7 3.0	22 59 19 27	21 13	1 46	+ 27 41	− 5
305	δ Androm. [ξ Herculis]	3.3 3.6	0 35 17 54	21 14	3 20	+ 29 49	+ 33
306	η Piscium α Herculis	3.6 3.2 bis 4.0	1 27 17 11	21 19	4 8	+ 14 41	+ 12
307	μ Androm. ϑ Herculis	4.0 4.0	0 52 17 53	21 22	3 29	+ 37 38	+ 22

Frühlings-punkts-Orts-Zeit	Ost-Stern *P*	Ost-Stern *p*	Ost-Stern *q*	West-Stern *P*	West-Stern *p*	West-Stern *q*	Grenzen in Breite
20ʰ 7ᵐ	92° 11′	9.926	0.195	93° 18′	9.948	0.284*n*	− 32° + 26°
20 27	92 5	9.948	0.283	93 28	9.926	0.196*n*	
20 10	130 58	9.684	9.742	127 27	9.741	9.819*n*	− 87 + 9
20 30	125 46	9.734	9.810	132 42	9.693	9.754*n*	
20 10	77 9	9.908	0.138	78 49	9.932	0.217*n*	− 22 + 46
20 30	77 52	9.932	0.218	78 9	9.907	0.137*n*	
20 11	54 51	9.906	0.132	56 35	9.927	0.200*n*	0 + 69
20 31	56 46	9.927	0.199	54 39	9.906	0.133*n*	
20 11	54 28	9.931	0.215	57 9	9.948	0.283*n*	+ 5 + 62
20 31	56 4	9.949	0.288	55 34	9.930	0.209*n*	
20 14	108 21	9.712	9.778	107 52	9.769	9.861*n*	− 71 + 34
20 34	106 6	9.767	9.857	110 19	9.715	9.784*n*	
20 16	126 45	9.923	0.187	125 21	9.942	0.258*n*	− 66 − 5
20 36	124 59	9.942	0.256	127 7	9.924	0.189*n*	
20 22	55 55	9.917	0.167	56 23	9.939	0.244*n*	+ 2 + 66
20 42	57 38	9.937	0.238	54 37	9.919	0.174*n*	
20 24	126 3	9.931	0.212	124 10	9.948	0.283*n*	− 64 − 6
20 44	124 25	9.948	0.285	125 47	9.930	0.211*n*	
20 30	65 35	9.788	9.890	68 12	9.828	9.960*n*	− 34 + 81
20 50	67 55	9.829	9.961	65 52	9.787	9.889*n*	
20 38	115 15	9.637	9.682	111 0	9.701	9.765*n*	− 68 + 26
20 58	111 31	9.703	9.767	114 40	9.635	9.680*n*	
20 43	49 38	9.869	0.040	53 16	9.892	0.095*n*	− 8 + 84
21 3	52 19	9.894	0.100	50 37	9.866	0.034*n*	
20 45	124 20	9.949	0.288	122 57	9.964	0.369*n*	− 57 − 9
21 5	123 3	9.964	0.370	124 14	9.949	0.287*n*	
20 49	50 27	9.876	0.057	52 15	9.902	0.122*n*	− 4 + 81
21 9	53 0	9.900	0.118	49 41	9.878	0.062*n*	
20 51	72 43	9.932	0.218	74 37	9.952	0.302*n*	− 12 + 44
21 11	73 31	9.952	0.304	73 52	9.931	0.215*n*	
20 54	104 21	9.815	9.936	103 42	9.855	0.011*n*	− 74 + 46
21 14	103 5	9.854	0.010	105 1	9.816	9.937*n*	
20 54	51 7	9.882	0.071	53 22	9.906	0.134*n*	− 4 + 79
21 14	53 32	9.906	0.133	50 57	9.883	0.072*n*	
21 2	177 59	9.814	9.935	172 14	9.820	9.944*n*	− 90 − 26
21 22	172 10	9.818	9.941	178 0	9.816	9.938*n*	
21 3	59 7	9.956	0.322	60 2	9.970	0.413*n*	+ 9 + 52
21 23	60 13	9.970	0.412	58 56	9.956	0.323*n*	
21 4	46 5	9.863	0.027	50 19	9.884	0.075*n*	− 6 + 90
21 24	49 3	9.887	0.084	47 21	9.858	0.018*n*	
21 9	58 18	9.689	9.748	63 0	9.741	9.820*n*	− 19 + 78
21 29	62 21	9.743	9.823	59 1	9.687	9.745*n*	
21 12	36 23	9.884	0.075	40 18	9.900	0.116*n*	+ 9 + 90
21 32	39 32	9.902	0.123	37 8	9.881	0.067*n*	

No.	Ost-Stern West-Stern	Gr.	α_o α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
308	τ Ceti η Ophiuchi	3.3 2.3	1h 40m 17 5	21h 23m	4h 17m	−16° 1′	−24′
309	[η Ceti] C. ν Ophiuchi	3.1 3.6	1 4 17 54	21 29	3 35	−10 13	−27
310	γ Pegasi ζ Aquilae	2.6 3.0	0 9 19 1	21 35	2 34	+14 12	+29
311	τ Ceti ξ Serpentis	3.3 3.6	1 40 17 32	21 36	4 4	−15 53	−32
312	ϑ Ceti ν Ophiuchi	3.1 3.6	1 20 17 54	21 37	3 43	− 9 12	+33
313	α Androm. β Cygni	2.0 3.0	0 4 19 27	21 45	2 18	+28 11	+25
314	α Pegasi β Delphini	2.0 3.3	23 0 20 33	21 47	1 13	+14 30	+13
315	ζ Ceti ν Ophiuchi	3.0 3.6	1 47 17 54	21 51	3 56	−10 16	−30
316	α Triang. [ξ Herculis]	3.6 3.6	1 48 17 54	21 51	3 57	+29 12	− 3
317	α Triang. ο Herculis	3.6 3.8	1 48 18 4	21 56	3 52	+28 57	+12
318	υ Ceti μ Sagittarii	4.0 4.0	1 56 18 8	22 2	3 54	−21 18	−13
319	[ο Persei] ζ Herculis N.	4.0 2.6	3 39 16 38	22 8	5 30	+31 53	+ 7
320	[γ Ceti] N. [γ Ophiuchi]	3.3 3.6	2 39 17 43	22 11	4 28	+ 2 48	+ 3
321	41 Arietis μ Herculis	3.8 3.3	2 45 17 43	22 14	4 31	+27 20	−26
322	η Piscium ζ Aquilae	3.6 3.0	1 27 19 1	22 14	3 13	+14 18	+35
323	ο Ceti C. η Serpentis	1.7 bis 9.0 3.0	2 15 18 17	22 16	3 59	− 3 9	−14
324	γ Pegasi β Delphini	2.6 3.3	0 9 20 33	22 21	1 48	+14 29	+12
325	γ Pegasi α Delphini	2.6 3.6	0 9 20 35	22 22	1 47	+15 8	−27
326	η Eridani ν Ophiuchi	3.0 3.6	2 52 17 54	22 23	4 29	− 9 31	+15
327	η Tauri δ Herculis	3.0 3.0	3 42 17 11	22 27	5 15	+24 23	−34
328	ι Ceti ε Aquarii	3.3 3.6	0 15 20 43	22 29	1 46	− 9 34	+15
329	ξ Piscium δ Aquilae	4.0 3.3	1 49 19 21	22 35	3 14	+ 2 50	− 6

Frühlings-punkts-Orts-Zeit	Ost-Stern *P*	Ost-Stern *p*	Ost-Stern *q*	West-Stern *P*	West-Stern *p*	West-Stern *q*	Grenzen in Breite
21h 13m	126° 50′	9.673	9.728	120° 37′	9.723	9.794n	−80° +13°
21 33	121 58	9.727	9.800	125 24	9.667	9.720n	
21 19	108 43	9.761	9.848	105 22	9.806	9.920n	−73 +39
21 39	106 44	9.808	9.923	107 13	9.758	9.845n	
21 25	70 53	9.889	0.087	73 13	9.915	0.159n	−22 +58
21 45	72 4	9.916	0.162	72 5	9.887	0.084n	
21 26	123 22	9.711	9.777	117 40	9.756	9.841n	−82 +20
21 46	119 22	9.761	9.848	121 32	9.704	9.769n	
21 27	106 5	9.734	9.810	106 1	9.789	9.892n	−69 +38
21 47	104 14	9.786	9.888	108 4	9.738	9.815n	
21 35	55 39	9.929	0.205	58 9	9.946	0.274n	+ 3 +62
21 55	57 14	9.947	0.278	56 35	9.927	0.200n	
21 37	74 18	9.972	0.435	75 11	9.984	0.561n	0 +30
21 57	74 43	9.984	0.562	74 46	9.972	0.434n	
21 41	111 50	9.702	9.765	107 22	9.755	9.839n	−70 +32
22 1	109 5	9.757	9.843	109 54	9.697	9.759n	
21 41	40 22	9.806	9.920	44 25	9.835	9.972n	−11 +90
22 1	44 33	9.835	9.971	40 14	9.806	9.921n	
21 46	41 28	9.813	9.932	45 55	9.840	9.981n	−12 +90
22 6	45 28	9.842	9.984	41 55	9.811	9.928n	
21 52	129 3	9.765	9.855	124 32	9.802	9.914n	−90 +19
22 12	125 8	9.804	9.918	128 26	9.763	9.851n	
21 58	7 47	9.728	9.801	15 31	9.737	9.814n	+28 +90
22 18	15 24	9.740	9.818	7 52	9.725	9.798n	
22 1	81 56	9.550	9.579	83 41	9.638	9.683n	−22 +37
22 21	83 25	9.638	9.683	82 15	9.550	9.579n	
22 4	33 43	9.735	9.812	38 31	9.775	9.870n	+ 1 +90
22 24	39 34	9.768	9.860	32 44	9.743	9.823n	
22 4	67 15	9.822	9.949	70 44	9.857	0.015n	−39 +80
22 24	69 11	9.859	0.019	68 55	9.819	9.944n	
22 6	97 15	9.670	9.724	95 24	9.734	9.810n	−53 +41
22 26	96 15	9.735	9.811	96 16	9.670	9.723n	
22 11	73 16	9.944	0.268	74 23	9.962	0.359n	− 9 +40
22 31	73 57	9.962	0.360	73 43	9.944	0.267n	
22 12	73 18	9.946	0.272	73 0	9.963	0.368n	− 7 +41
22 32	73 59	9.963	0.366	72 17	9.946	0.275n	
22 13	115 13	9.577	9.611	111 58	9.657	9.706n	−60 +10
22 33	110 54	9.654	9.703	116 26	9.581	9.615n	
22 17	18 49	9.630	9.674	26 54	9.675	9.730n	+27 +90
22 37	28 7	9.661	9.712	17 55	9.647	9.694n	
22 19	100 38	9.944	0.264	100 44	9.962	0.359n	−35 +13
22 39	100 11	9.962	0.358	101 12	9.944	0.265n	
22 25	85 39	9.800	9.910	85 47	9.842	9.986n	−54 +63
22 45	86 3	9.842	9.986	85 21	9.800	9.910n	

Tafel Ia.

No.	Ost-Stern / West-Stern	Gr.	α_o / α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	$\frac{1}{2}(\alpha_o-\alpha_w)$	$\frac{1}{2}(\delta_o+\delta_w)$	$\frac{1}{2}(\delta_o-\delta_w)$
330	ε Eridani	3.0	3^h 29^m	22^h 41^m	4^h 47^m	− 9° 46′	0′
	ν Ophiuchi	3.6	17 54				
331	12 Eridani	3.3	3 8	22 42	4 27	−29 36	+16
	δ Sagittarii	2.8	18 15				
332	[γ Arietis]	4.3 bis 4.4	1 49	22 46	3 3	+18 35	+16
	δ Sagittae	4.0	19 43				
333	β Arietis	2.8	1 50	22 52	2 57	+19 48	+34
	γ Sagittae	3.6	19 55				
334	[η Ceti] C.	3.1	1 4	22 53	2 11	−10 15	−25
	ε Aquarii	3.6	20 43				
335	[γ Ceti] N.	3.3	2 39	23 0	3 39	+ 2 54	− 2
	δ Aquilae	3.3	19 21				
336	η Piscium	3.6	1 27	23 0	2 27	+14 35	+18
	β Delphini	3.3	20 33				
337	η Piscium	3.6	1 27	23 1	2 26	+15 14	−21
	α Delphini	3.6	20 35				
338	ϑ Ceti	3.1	1 20	23 1	2 18	− 9 14	+35
	ε Aquarii	3.6	20 43				
339	41 Arietis	3.8	2 45	23 6	3 39	+27 20	−26
	β Cygni	3.0	19 27				
340	α Ceti	2.3	2 58	23 9	3 48	+ 3 20	+24
	δ Aquilae	3.3	19 21				
341	ζ Ceti	3.0	1 47	23 15	2 32	−10 18	−29
	ε Aquarii	3.6	20 43				
342	δ Ceti	4.0	2 35	23 21	3 14	− 0 34	+31
	ϑ Aquilae	3.0	20 7				
343	α Triang.	3.6	1 48	23 29	2 19	+29 30	−21
	ζ Cygni	3.0	21 9				
344	[ξ Tauri] C.	3.6	3 22	23 32	3 50	+ 9 54	−29
	γ Aquilae	3.0	19 42				
345	ο Tauri	3.6	3 20	23 33	3 47	+ 8 40	+ 2
	α Aquilae	1.3	19 46				
346	[ξ Tauri] C.	3.6	3 22	23 34	3 48	+ 9 1	+24
	α Aquilae	1.3	19 46				
347	τ Ceti	3.3	1 40	23 37	2 2	−16 44	+20
	[γ Capric.] C.	3.6	21 35				
348	τ Ceti	3.3	1 40	23 41	1 59	−16 28	+ 4
	δ Capricorni	3.0	21 42				
349	β Tauri	2.0	5 21	23 42	5 38	+28 38	− 7
	ο Herculis	2.8	18 4				
350	η Eridani	3.0	2 52	23 47	3 5	− 9 32	+17
	ε Aquarii	3.6	20 43				
351	ν Tauri	4.0	3 58	23 55	4 4	+ 5 57	−13
	β Aquilae	4.0	19 51				

Tafel Ia.

Frühlings-punkts-Orts-Zeit		Ost-Stern *P*		Ost-Stern *p*	Ost-Stern *q*	West-Stern *P*		West-Stern *p*	West-Stern *q*	Grenzen in Breite	
22h	31m	122°	30′	9.499	9.522	115°	59′	9.588	9.623n	− 40°	− 18°
22	51	115	59	9.588	9.623	122	30	9.499	9.522n		
22	32	147	38	9.764	9.853	142	46	9.796	9.904n	− 90	0
22	52	142	11	9.793	9.898	148	11	9.768	9.859n		
22	36	62	54	9.851	0.003	65	36	9.881	0.069n	− 26	+ 76
22	56	64	55	9.882	0.071	63	37	9.849	0.000n		
22	42	61	30	9.863	0.028	64	53	9.890	0.091n	− 20	+ 73
23	2	63	30	9.892	0.096	62	57	9.860	0.022n		
22	43	102	58	9.916	0.163	101	20	9.939	0.244n	43	+ 20
23	3	102	17	9.939	0.246	101	58	9.916	0.162n		
22	50	84	44	9.735	9.811	85	13	9.788	9.891n	48	+ 58
23	10	85	21	9.788	9.891	84	36	9.735	9.811n		
22	50	71	5	9.899	0.113	72	54	9.924	0.188n	18	+ 55
23	10	72	12	9.924	0.190	71	50	9.898	0.111n		
22	51	71	9	9.900	0.117	71	25	9.926	0.196n	18	+ 55
23	11	72	15	9.925	0.194	70	16	9.901	0.119n		
22	51	100	47	9.905	0.129	101	33	9.930	0.212n	45	+ 23
23	11	100	10	9.930	0.210	102	15	9.905	0.131n		
22	56	46	53	9.821	9.946	49	20	9.854	0.010n	− 18	+ 90
23	16	50	24	9.851	0.003	45	49	9.825	9.954n		
23	59	82	39	9.707	9.772	84	57	9.764	9.854n	− 46	+ 56
23	19	83	34	9.765	9.855	84	13	9.706	9.771n		
23	5	104	4	9.886	0.081	102	1	9.914	0.156n	52	+ 27
23	25	103	10	9.914	0.158	102	50	9.886	0.079n		
23	11	90	6	9.799	9.908	91	34	9.842	9.985n	− 60	+ 58
23	31	90	6	9.842	9.985	91	44	9.799	9.908n		
23	19	54	57	9.928	0.204	55	48	9.947	0.281n	+ 5	+ 63
23	39	56	35	9.946	0.277	54	10	9.930	0.208n		
23	22	71	37	9.715	9.784	72	15	9.772	9.866n	− 34	+ 71
23	42	73	51	9.770	9.862	69	50	9.719	9.788n		
23	23	73	20	9.723	9.794	75	28	9.776	9.872n	− 38	+ 68
23	43	75	19	9.777	9.873	73	30	9.723	9.794n		
23	24	71	54	9.722	9.792	75	22	9.773	9.868n	− 37	+ 68
23	44	74	4	9.775	9.871	73	22	9.719	9.789n		
23	27	109	23	9.930	0.211	109	12	9.951	0.297n	− 47	+ 8
23	47	108	28	9.950	0.295	110	8	9.931	0.213n		
23	31	109	12	9.934	0.225	108	28	9.954	0.312n	− 46	+ 8
23	51	108	20	9.954	0.311	109	20	9.934	0.226n		
23	32	5	22	9.681	9.738	14	7	9.695	9.757n	+ 35	+ 90
23	52	14	14	9.693	9.753	5	19	9.684	9.742n		
23	37	103	52	9.827	9.957	103	28	9.865	0.033n	70	+ 43
23	57	102	41	9.865	0.031	104	41	9.828	9.959n		
23	45	77	20	9.659	9.710	78	19	9.726	9.797n	34	+ 59
0	5	79	8	9.725	9.796	76	23	9.660	9.711n		

Tafel Ib.

Ergänzungsverzeichnis von Zeitsternpaaren.

No.	Ost-Stern Name	a_o		West-Stern Name	a_w		$\frac{1}{2}(a_o+a_w)$		Grenzen in Breite	
401	β Columb. N.	5h	48m	η Sagittar. N.	18h	12m	0h	0m	−90°	−31°
402	ε Tauri	4	23	δ Sagittae	19	43		3	−9	+87
403	α Ceti	2	58	α Equulei	21	11		4	−47	+58
404	ρ Persei	2	59	[τ Cygni] C.	21	11		5	+14	+80
405	ε Persei	3	52	γ Cygni	20	19		5	+8	+90
406	ζ Tauri	5	32	110 Herculis	18	42		7	+41	+90
407	[β Leporis] N.	5	24	ξ² Sagittar. N.	18	52		8	−90	−31
408	ζ Can. maj. N.	6	17	γ Sagittarii	18	0		8	−90	−46
409	[ν Aurigae] A.	5	45	α Lyrae	18	34		9	+25	+90
410	μ Ceti	2	40	ε Pegasi	21	40		10	27	+51
411	[β Leporis] N.	5	24	π Sagittarii	19	4		14	−90	27
412	ζ Can. maj. N.	6	17	δ Sagittar. N.	18	15		16	−90	−43
413	δ Ceti	2	35	α Aquarii	22	1		18	−35	+35
414	π Argus N.	7	14	υ Scorpii N.	17	25		19	−90	−50
415	[δ Leporis]	5	47	ξ² Sagittar. N.	18	52		19	−90	−44
416	π Argus N.	7	14	λ Scorpii N.	17	27		20	−90	−49
417	[γ Tauri] N.	4	15	β Delphini	20	33		24	−27	+80
418	β Tauri	5	21	β Cygni	19	27		24	+13	+90
419	53 Eridani	4	34	[β Capric.] N.	20	16		25	−78	+19
420	[γ Tauri] N.	4	15	α Delphini	20	35		25	−27	+81
421	[δ Leporis]	5	47	π Sagittarii	19	4		25	−90	−36
422	[γ Tauri] N.	4	15	[δ Delphini]	20	39		27	−28	+80
423	τ⁶ Eridani	3	43	ζ Capricorni	21	22		32	−83	+19
424	δ Ceti	2	35	η Aquarii	22	31		33	−30	+29
425	ν Tauri	3	58	α Equulei	21	11		34	−49	+65
426	ε Canis maj.	6	55	δ Sagittar. N.	18	15		35	−90	−52
427	ζ Can. maj. N.	6	17	ζ Sagittar. N.	18	57		37	−90	−34
428	μ Ceti	2	40	ζ Pegasi	22	37		38	−17	+40
429	π Argus N.	7	14	η Sagittar. N.	18	12		43	−90	−44
430	o¹ Eridani	4	7	β Aquarii	21	27		47	−68	+48
431	ϑ Geminor.	6	47	β Lyrae	18	47		47	+38	+90
432	ι Aurigae	4	51	ε Cygni	20	43		47	−6	+90
433	ζ Argus N.	8	0	κ Scorpii N.	17	36		48	−90	−50
434	ζ Argus N.	8	0	ι¹ Scorpii N.	17	41		50	−90	−49
435	η Tauri	3	42	[ι Pegasi] N.	22	3		52	−10	+72
436	δ Canis maj.	7	5	φ Sagittar. N.	18	40		52	−90	−55
437	[27 Tauri]	3	44	[ι Pegasi] N.	22	3		53	−10	+72
438	[λ Eridani]	5	5	ε Aquarii	20	43		54	−64	+25
439	[γ Ceti] N.	2	39	[γ Piscium] N.	23	12		55	−20	+27
440	ε Canis maj.	6	55	ζ Sagittar. N.	18	57		56	−90	−44
441	δ Canis maj.	7	5	σ Sagittarii	18	50		57	−90	−54
442	γ Eridani	3	54	ι Aquarii	22	2		58	−70	+31
443	ε Canis maj.	6	55	τ Sagittar. N.	19	1		58	−90	−45
444	ζ Leporis	5	43	[β Capric.] N.	20	16		59	−72	−6
445	[ξ Tauri] C.	3	22	ζ Pegasi	22	37	0	59	−24	+48

No.	Ost-Stern			West-Stern			$\frac{1}{2}(\alpha_o+\alpha_w)$		Grenzen in Breite	
	Name	α_o		Name	α_w					
446	ν Tauri	3h	58m	ϑ Pegasi	22h	6m	1h	2m	−46°	+63°
447	[ν Aurigae] A.	5	45	γ Cygni	20	19		2	+ 8	+90
448	[η Leporis]	5	52	[β Capric.] N.	20	16		4	−69	−12
449	α Ceti	2	58	[γ Piscium] N.	23	12		5	−23	+30
450	α Geminor.	7	29	β Lyrae	18	47		8	+46	+90
451	η Can. maj. N.	7	21	ζ Sagittar. N.	18	57		9	−90	−48
452	ε Leporis	5	2	ζ Capricorni	21	22		12	−90	+18
453	α Geminor.	7	29	γ Lyrae	18	56		12	+46	+90
454	[27 Tauri]	3	44	λ Pegasi	22	42		13	− 6	+63
455	η Tauri	3	42	[μ Pegasi] N.	22	46		14	− 5	+64
456	[27 Tauri]	3	44	[μ Pegasi] N.	22	46		15	− 5	+64
457	53 Eridani	4	34	ι Aquarii	22	2		18	−80	+38
458	γ Eridani	3	54	[τ Aquarii]	22	45		19	−56	+24
459	[τ Orionis] A.	5	13	β Aquarii	21	27		20	−61	+39
460	μ Leporis N.	5	9	[γ Capric.] C.	21	35		22	−84	+26
461	μ Leporis N.	5	9	δ Capricorni	21	42		25	−83	+29
462	o¹ Eridani	4	7	λ Aquarii	22	48		27	−54	+34
463	[γ Leporis]	5	41	ζ Capricorni	21	22		31	−90	+11
464	ϑ Aurigae	5	54	[τ Cygni] C.	21	11		32	0	+90
465	β Geminor.	7	40	β Cygni	19	27		33	+49	+90
466	ψ Argus N.	9	27	ι¹ Scorpii N.	17	41		34	−90	−57
467	[γ Tauri] N.	4	15	α Pegasi	23	0		37	−21	+60
468	τ Tauri	4	37	λ Pegasi	22	42		39	−14	+75
469	53 Eridani	4	34	[τ Aquarii]	22	45		39	−69	+31
470	ϑ Geminor.	6	47	ε Cygni	20	43		45	+14	+90
471	ζ Leporis	5	43	ι Aquarii	22	2		52	−79	+27
472	ζ Orionis N.	5	36	γ Aquarii	22	17		56	−57	+50
473	ν Tauri	3	58	ω Piscium	23	55		56	−22	+36
474	[λ Eridani]	5	5	λ Aquarii	22	48		56	−71	+46
475	[η Leporis]	5	52	ι Aquarii	22	2		57	−78	+26
476	β Orionis	5	10	λ Aquarii	22	48		59	−72	+48
477	μ Leporis N.	5	9	δ Aquarii	22	50	1	59	−81	+34
478	[τ Orionis] A.	5	13	λ Aquarii	22	48	2	0	−71	+49
479	ε Leporis	5	2	c² Aquarii	23	5		3	−75	+16
480	α Can. maj.	6	41	[γ Capric.] C.	21	35		8	−81	+ 2
481	ε Geminor.	6	38	[κ Pegasi]	21	41		9	− 1	+90
482	o² Can. maj. N.	6	59	ζ Capricorni	21	22		10	−90	− 9
483	[γ Tauri] N.	4	15	γ Pegasi	0	9		12	−11	+46
484	ξ Argus N.	7	45	ψ Capric. C.	20	41		13	−90	−37
485	ζ Leporis	5	43	[τ Aquarii]	22	45		14	−81	+35
486	[β Leporis] N.	5	24	c² Aquarii	23	5		14	−82	+23
487	[η Leporis]	5	52	[τ Aquarii]	22	45		18	−80	+34
488	ε Geminor.	6	38	[ι Pegasi] N.	22	3		20	− 6	+90
489	[δ Leporis]	5	47	c² Aquarii	23	5		26	−90	+28
490	π Argus N.	7	14	γ Gruis N.	21	48		31	−90	− 8
491	ζ Can. maj. N.	6	17	α Pisc. austr.	22	53		35	−90	+12
492	[λ Eridani]	5	5	ι Ceti	0	15		40	−48	+26
493	κ Geminor.	7	39	[κ Pegasi]	21	41		40	+15	+90
494	ι Aurigae	4	51	π Androm.	0	32		41	+13	+63
495	ε Geminor.	6	38	[μ Pegasi] N.	22	46	2	42	−15	+90

No.	Ost-Stern Name	α_o		West-Stern Name	α_w		$\frac{1}{2}(\alpha_o+\alpha_w)$		Grenzen in Breite	
496	ϰ Geminor.	7h	39m	[ι Pegasi] N.	22h	3m	2h	51m	+ 9°	+ 90°
497	40 Lyncis	9	16	ε Cygni	20	43	2	59	+ 43	+ 90
498	η Can. maj. N.	7	21	α Pisc. austr.	22	53	3	7	− 90	+ 5
499	γ Orionis	5	20	ε Piscium	0	58		9	− 24	+ 40
500	ϰ Geminor.	7	39	[μ Pegasi] N.	22	46		12	− 3	+ 90
501	[λ Eridani]	5	5	ϑ Ceti	1	20		12	− 36	+ 16
502	β Tauri	5	21	[τ Piscium]	1	7		14	+ 7	+ 59
503	[ν Aurigae] A.	5	45	μ Androm.	0	52		18	+ 18	+ 71
504	ϑ Aurigae	5	54	μ Androm.	0	52		23	+ 17	+ 72
505	α Orionis	5	50	ε Piscium	0	58		24	− 29	+ 46
506	β Cancri	8	12	ζ Pegasi	22	37		24	+ 18	+ 41
507	ζ Can. maj. N.	6	17	α Sculptor. N.	0	54		35	− 71	− 2
508	ϑ Geminor.	6	47	π Androm.	0	32		39	+ 3	+ 85
509	ε Leonis	9	41	[ϰ Pegasi]	21	41		41	+ 55	+ 90
510	ι Geminor.	7	20	α Androm.	0	4		42	− 17	+ 90
511	[46 Leon. min.] A.	10	48	ε Cygni	20	43		45	+ 56	+ 90
512	[γ Leporis]	5	41	υ Ceti	1	56		48	− 49	0
513	ε Leonis	9	41	[ι Pegasi] N.	22	3		52	+ 50	+ 90
514	ε Canis maj.	6	55	α Sculptor. N.	0	54		54	− 80	+ 3
515	ϑ Geminor.	6	47	β Androm.	1	5	3	56	+ 9	+ 77
516	η Can. maj. N.	7	21	α Sculptor. N.	0	54	4	7	− 86	+ 7
517	β Canis min.	7	22	ε Piscium	0	58		10	− 48	+ 72
518	ε Leonis	9	41	λ Pegasi	22	42		11	+ 38	+ 90
519	ε Leonis	9	41	[μ Pegasi] N.	22	46		13	+ 36	+ 90
520	[ε Hydrae] N.	8	42	ω Piscium	23	55		18	− 20	+ 53
521	ζ Hydrae	8	51	ω Piscium	23	55		23	− 17	+ 47
522	[μ Leonis] N.	9	48	β Pegasi	22	59		23	+ 30	+ 90
523	ϑ Geminor.	6	47	β Trianguli	2	4		25	+ 12	+ 67
524	ζ Leonis	10	12	λ Pegasi	22	42		27	+ 51	+ 90
525	ζ Leonis	10	12	[μ Pegasi] N.	22	46		29	+ 47	+ 90
526	ι Geminor.	7	20	α Trianguli	1	48		34	0	+ 73
527	[ε Hydrae] N.	8	42	ε Piscium	0	58		50	− 38	+ 64
528	ζ Hydrae	8	51	ε Piscium	0	58		54	− 36	+ 63
529	o^2 Can. maj. N.	6	59	τ^2 Eridani C.	2	58	4	58	− 53	− 1
530	ι Cancri	8	41	α Trianguli	1	48	5	14	− 10	+ 90
531	δ Cancri	8	40	[γ Arietis]	1	49		14	− 30	+ 88
532	Br. 1197	8	21	ο Ceti C.	2	15		18	− 62	+ 53
533	ξ Argus N.	7	45	τ^3 Eridani C.	2	58		21	− 61	+ 4
534	ϑ Hydrae	9	10	ξ Piscium	1	49		24	− 49	+ 58
535	ζ Argus N.	8	0	ϑ Eridani N.	2	55		27	− 73	− 21
536	α Geminor.	7	29	[ο Persei]	3	39		34	+ 14	+ 57
537	α Geminor.	7	29	ζ Persei	3	48		38	+ 15	+ 56
538	40 Lyncis	9	16	β Trianguli	2	4		40	0	+ 90
539	ϰ Geminor.	7	39	[27 Tauri]	3	44		41	+ 2	+ 52
540	α Canis min.	7	35	ν Tauri	3	58		46	18	+ 32
541	ν Ursae maj.	11	14	π Androm.	0	32		53	+ 22	+ 90
542	ι Navis	8	4	τ^6 Eridani	3	43		53	− 57	+ 1
543	ϑ Hydrae	9	10	[γ Ceti] N.	2	39		54	− 54	+ 63
544	[46 Leon. min.] A.	10	48	β Androm.	1	5	5	56	+ 10	+ 90
545	μ Hydrae	10	22	τ Ceti	1	40	6	1	− 81	+ 11
546	[ο Leonis] N.	9	36	μ Ceti	2	40	6	8	− 41	+ 73

No.	Ost-Stern Name	α_o	West-Stern Name	α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	Grenzen in Breite	
547	α Cancri	8h 54m	f Tauri	3h 26m	6h 10m	−28°	+61°
548	ψ Argus N.	9 27	ϑ Eridani N.	2 55	11	−88	−15
549	[ν Hydrae] N.	10 45	τ Ceti	1 40	12	−79	+ 3
550	[μ Leonis] N.	9 48	41 Arietis	2 45	16	−18	+90
551	[ε Hydrae] N.	8 42	ν Tauri	3 58	20	−30	+45
552	ζ Hydrae	8 51	ν Tauri	3 58	24	−31	+45
553	α Cancri	8 54	λ Tauri	3 56	25	−24	+53
554	[46 Leon. min.] A.	10 48	β Trianguli	2 4	26	0	+90
555	Br. 1197	8 21	ν Eridani	4 32	26	−32	+22
556	α Mali N.	8 40	ν⁴ Eridani N.	4 14	27	−64	−12
557	δ Cancri	8 40	δ Tauri	4 18	29	− 8	+51
558	[γ Crateris]	11 20	τ Ceti	1 40	30	−77	−12
559	Br. 1197	8 21	[μ Eridani] N.	4 41	31	−30	+21
560	δ Cancri	8 40	ε Tauri	4 23	31	− 7	+51
561	β Crateris	11 7	υ Ceti	1 56	31	−90	− 1
562	q Velorum N.	10 11	ϑ Eridani N.	2 55	33	−90	−15
563	[ϱ Leonis] N.	10 28	μ Ceti	2 40	34	−33	+70
564	β Leonis	11 44	η Piscium	1 27	35	+12	+69
565	ν Ursae maj.	11 14	β Trianguli	2 4	39	+ 4	+90
566	ε Leonis	9 41	[27 Tauri]	3 44	42	−13	+77
567	12 Can. ven. sq.	12 52	μ Androm.	0 52	52	+14	+82
568	[ϱ Leonis] N.	10 28	o Tauri	3 20	54	−40	+73
569	[ϱ Leonis] N.	10 28	[ξ Tauri] C.	3 22	55	−40	+73
570	δ Crateris	11 15	π Ceti	2 40	57	−75	+14
571	ζ Leonis	10 12	[27 Tauri]	3 44	6 58	−19	+86
572	β Virginis	11 46	[γ Ceti] N.	2 39	7 12	−14	+29
573	α Hydrae	9 23	[λ Eridani]	5 5	14	−42	+22
574	o Virginis	12 1	μ Ceti	2 40	20	+ 1	+50
575	[46 Leon. min.] A.	10 48	ξ Persei	3 53	20	+ 3	+90
576	ξ Urs. maj. C.	11 13	ζ Persei	3 48	30	− 6	+90
577	γ Bootis	14 28	μ Androm.	0 52	40	+47	+90
578	o Virginis	12 1	[ξ Tauri] C.	3 22	41	−20	+60
579	ϑ Leonis	11 10	[γ Tauri] N.	4 15	42	−34	+83
580	μ Hydrae	10 22	μ Leporis N.	5 9	45	−60	+20
581	ϱ Bootis	14 28	[τ Piscium]	1 7	47	+58	+90
582	κ Centauri C.	12 48	ϑ Eridani N.	2 55	51	−90	−12
583	δ Crateris	11 15	53 Eridani	4 34	54	−80	+37
584	12 Can. ven. sq.	12 52	ϱ Persei	2 59	55	+12	+90
585	[ν Hydrae] N.	10 45	μ Leporis N.	5 9	57	−67	+24
586	β Leonis	11 44	[γ Tauri] N.	4 15	7 59	−29	+81
587	ξ Urs. maj. C.	11 13	ι Aurigae	4 51	8 2	+ 2	+85
588	β Corvi	12 30	τ⁶ Eridani	3 43	6	−90	+ 4
589	μ Bootis	15 21	μ Androm.	0 52	6	+53	+90
590	[γ Crateris]	11 20	μ Leporis N.	5 9	14	−77	+29
591	12 Can. ven. sq.	12 52	ε Persei	3 52	22	+ 6	+90
592	β Crateris	11 7	[γ Leporis]	5 41	24	−67	+11
593	[γ Crateris]	11 20	α Leporis	5 29	24	−71	+23
594	γ Hydrae	13 14	τ⁶ Eridani	3 43	28	−90	− 8
595	α Virginis	13 20	[δ Eridani] N.	3 39	29	−38	−24
596	μ Hydrae	10 22	α Canis maj.	6 41	8 31	−43	+ 6

No.	Ost-Stern Name	α_o		West-Stern Name	α_w		$\frac{1}{2}(\alpha_o+\alpha_w)$		Grenzen in Breite	
597	[γ Corvi] N.	12h	11m	μ Leporis N.	5h	9m	8h	40m	−85°	+31°
598	η Centauri N.	14	30	ϑ Eridani N.	2	55		42	−90	−27
599	γ Bootis	14	28	ϱ Persei	2	59		43	+27	+90
600	δ Corvi	12	25	μ Leporis N.	5	9		47	−83	+30
601	[46 Leon.min.] A.	10	48	ϑ Geminor.	6	47		47	+15	+61
602	[γ Crateris]	11	20	β Canis maj.	6	19		49	−59	+15
603	η Virginis	12	15	δ Orionis	5	27		51	−57	+57
604	κ Centauri N.	14	53	ϑ Eridani N.	2	55	8	54	−90	−31
605	[γ Crateris]	11	20	α Canis maj.	6	41	9	0	−54	+13
606	β Bootis	14	59	β Persei	3	2		0	+31	+90
607	ν Ursae maj.	11	14	ϑ Geminor.	6	47		0	+14	+64
608	η Bootis	13	50	ε Tauri	4	23		6	+5	+87
609	[γ Virgin. m.] N.	12	37	ζ Orionis N.	5	36		6	−57	+54
610	ϱ Bootis	14	28	ζ Persei	3	48		8	+23	+90
611	ϱ Bootis	14	28	ε Persei	3	52		10	+20	+90
612	μ Bootis	15	21	ϱ Persei	2	59		10	+37	+90
613	γ Lupi N.	15	29	ϑ Eridani N.	2	55		12	−90	−37
614	12 Can. ven. sq.	12	52	[ν Aurigae] A.	5	45		18	+12	+90
615	ξ Urs. maj. C.	11	13	α Geminor.	7	29		21	+15	+56
616	ζ Virginis	13	30	δ Orionis	5	27		28	−47	+47
617	ι Centauri N.	13	16	β Columb. N.	5	48		32	−90	−3
618	[ϑ Coron. bor.]	15	29	[ο Persei]	3	39		34	+38	+90
619	ι Virginis	14	11	β Eridani	5	3		37	−35	+10
620	ο Virginis	12	1	β Canis min.	7	22		41	−24	+46
621	ι Virginis	14	11	ι Orionis	5	31		51	−52	+24
622	ϑ Centauri N.	14	1	β Columb. N.	5	48	9	54	−90	+4
623	γ Hydrae	13	14	o^2 Can. maj. N.	6	59	10	6	−81	+18
624	γ Bootis	14	28	[ν Aurigae] A.	5	45		6	+5	+90
625	ζ Herculis N.	16	38	[ο Persei]	3	39		8	+51	+90
626	α Librae	14	46	ζ Leporis	5	43		14	−76	+5
627	ι Centauri N.	13	16	π Argus N.	7	14		15	−82	−11
628	η Herculis	16	40	ε Persei	3	52		16	+39	+90
629	ι^1 Scorpii N.	17	41	ϑ Eridani N.	2	55		18	−90	−51
630	ε Herculis	16	57	ζ Persei	3	48		22	+54	+90
631	κ Centauri C.	12	48	ζ Argus N.	8	0		24	−70	−22
632	δ Scorpii	15	55	ε Leporis	5	2		28	−90	−40
633	ε Scorpii N.	16	44	υ^4 Eridani N.	4	14		29	−90	−43
634	ε Scorpii N.	16	44	d Eridani N.	4	21		32	−90	41
635	μ Bootis	15	21	ϑ Aurigae	5	54		37	+8	+90
636	ϑ Centauri N.	14	1	π Argus N.	7	14		37	−90	−8
637	δ Scorpii	15	55	[γ Leporis]	5	41		48	−90	−25
638	β Herculis	16	26	ζ Tauri	5	32	10	59	+43	+90
639	[γ Serpentis] N.	15	52	γ Geminor.	6	33	11	12	+3	+77
640	η Herculis	16	40	[ν Aurigae] A.	5	45		12	+23	+90
641	α Lyrae	18	34	ε Persei	3	52		13	+52	+90
642	ε Sagittar. N.	18	18	υ^4 Eridani N.	4	14		16	−90	−56
643	β Herculis	16	26	η Geminor.	6	9		17	+24	+90
644	ε Sagittar. N.	18	18	d Eridani C.	4	21		19	−90	−55
645	ψ Bootis	15	1	β Geminor.	7	40		20	−18	+90
646	β Herculis	16	26	μ Geminor.	6	18	11	22	+21	+90

No.	Ost-Stern Name	α_o	West-Stern Name	α_w	$\frac{1}{2}(\alpha_o+\alpha_w)$	Grenzen in Breite	
647	α Coron. bor.	$15^h\ 31^m$	ι Geminor.	$7^h\ 20^m$	$11^h\ 25^m$	− 9°	+ 90°
648	α Bootis	14 12	δ Cancri	8 40	26	− 18	+ 67
649	π Scorpii N.	15 53	δ Canis maj.	7 5	29	− 90	+ 2
650	[ϑ Coron. bor.]	15 29	α Geminor.	7 29	29	− 8	+ 90
651	μ Herculis	17 43	β Tauri	5 21	32	+ 51	+ 90
652	β Coron. bor.	15 24	β Geminor.	7 40	32	− 12	+ 90
653	π Herculis	17 12	ϑ Aurigae	5 54	33	+ 27	+ 90
654	τ Virginis	13 57	ϑ Hydrae	9 10	33	− 35	+ 40
655	ε Coron. bor.	15 54	ι Geminor.	7 20	37	− 5	+ 90
656	[ξ Herculis]	17 54	β Tauri	5 21	37	+ 51	+ 90
657	σ Scorpii N.	16 16	δ Canis maj.	7 5	40	− 90	− 4
658	τ Scorpii N.	16 30	ε Canis maj.	6 55	42	− 90	− 8
659	o Herculis	18 4	β Tauri	5 21	42	+ 54	+ 90
660	β Herculis	16 26	ζ Geminor.	6 59	42	+ 5	+ 90
661	α Scorpii	16 24	δ Canis maj.	7 5	44	− 90	− 6
662	γ Lupi N.	15 29	ζ Argus N.	8 0	44	− 90	− 9
663	ε Coron. bor.	15 54	β Geminor.	7 40	47	− 8	+ 90
664	β Herculis	16 26	δ Geminor.	7 15	50	+ 2	+ 90
665	ϑ Herculis	17 53	ϑ Aurigae	5 54	53	+ 35	+ 90
666	γ Lyrae	18 56	ι Aurigae	4 51	53	+ 57	+ 90
667	109 Virginis	14 42	ϑ Hydrae	9 10	56	− 45	+ 52
668	ε Sagittar. N.	18 18	α Columb. N.	5 36	57	− 90	− 45
669	μ Centauri N.	13 44	q Velorum N.	10 11	11 57	− 60	− 31
670	η Sagittar. N.	18 12	β Columb. N.	5 48	12 0	− 90	− 40
671	σ Scorpii N.	16 16	ξ Argus N.	7 45	0	− 90	+ 7
672	μ Serpentis	15 45	Br. 1197	8 21	3	− 59	+ 48
673	γ Sagittarii	18 0	ζ Can. maj. N.	6 17	8	− 90	− 40
674	α Lyrae	18 34	[ν Aurigae] A.	5 45	9	+ 40	+ 90
675	κ Serpentis	15 45	δ Cancri	8 40	12	− 28	+ 88
676	δ Bootis	15 12	40 Lyncis	9 16	14	+ 6	+ 80
677	δ Ophiuchi	16 10	Br. 1197	8 21	15	− 56	+ 42
678	δ Sagittar. N.	18 15	ζ Can. maj. N.	6 17	16	− 90	− 43
679	ε Ophiuchi	16 14	Br. 1197	8 21	17	− 56	+ 41
680	υ Scorpii N.	17 25	π Argus N.	7 14	19	− 90	− 15
681	η Centauri N.	14 30	q Velorum N.	10 11	20	− 67	− 25
682	λ Scorpii N.	17 27	π Argus N.	7 14	20	− 90	− 15
683	γ Lupi N.	15 29	ψ Argus N.	9 27	28	− 83	− 17
684	γ Herculis	16 18	δ Cancri	8 40	29	− 23	+ 88
685	μ Herculis	17 43	ι Geminor.	7 20	31	+ 21	+ 90
686	κ Centauri N.	14 53	q Velorum N.	10 11	32	− 71	− 24
687	α Librae	14 46	μ Hydrae	10 22	34	− 50	+ 13
688	δ Sagittar. N.	18 15	ε Canis maj.	6 55	35	− 90	− 35
689	ζ Sagittar. N.	18 57	ζ Can. maj. N.	6 17	37	− 90	− 51
690	γ Cygni	20 19	η Aurigae	5 0	39	+ 54	+ 90
691	109 Herculis	18 20	ζ Geminor.	6 59	39	+ 56	+ 90
692	α Coron. bor.	15 31	[μ Leonis] N.	9 48	39	− 5	+ 74
693	o Herculis	18 4	ι Geminor.	7 20	42	+ 27	+ 90
694	η Sagittar. N.	18 12	π Argus N.	7 14	43	− 90	− 24
695	[γ Coron. bor.]	15 39	[μ Leonis] N.	9 48	43	− 5	+ 75
696	λ Sagittar. N.	18 22	δ Canis maj.	7 5	12 43	− 90	− 39

No.	Ost-Stern Name	α_o		West-Stern Name	α_w		$\frac{1}{2}(\alpha_o+\alpha_w)$		Grenzen in Breite	
697	β Lyrae	18h	47m	ϑ Geminor.	6h	47m	12h	47m	+38°	+90°
698	[ξ Herculis]	17	54	β Geminor.	7	40		47	+18	+90
699	109 Herculis	18	20	δ Geminor.	7	15		47	+45	+90
700	[λ Ophiuchi] N.	16	26	ϑ Hydrae	9	10		48	-50	+57
701	κ Scorpii N.	17	36	ζ Argus N.	8	0		48	-90	-9
702	δ Sagittar. N.	18	15	η Can. maj. N.	7	21		48	-90	-28
703	γ Lupi N.	15	29	ϱ Velorum N.	10	11		50	-76	21
704	ε Coron. bor.	15	54	[μ Leonis] N.	9	48		51	-8	+78
705	φ Sagittar. N.	18	40	δ Canis maj.	7	5		52	90	43
706	ζ Sagittar. N.	18	57	ε Canis maj.	6	55		56	90	-44
707	ν Cygni	20	54	η Aurigae	5	0		57	+57	+90
708	σ Sagittarii	18	50	δ Canis maj.	7	5		57	-90	-46
709	τ Sagittar. N.	19	1	ε Canis maj.	6	55	12	58	-90	-47
710	γ Cygni	20	19	[ν Aurigae] A.	5	45	13	2	+51	+90
711	β Lyrae	18	47	α Geminor.	7	29		8	+31	+90
712	ζ Sagittar. N.	18	57	η Can. maj. N.	7	21		9	-90	-38
713	α Ophiuchi	17	31	α Cancri	8	54		12	-17	+69
714	γ Lyrae	18	56	α Geminor.	7	29		12	+33	+90
715	α Ophiuchi	17	31	α Cancri	8	54		12	-17	+69
716	δ Bootis	15	12	ν Ursae maj.	11	14		13	+15	+61
717	[ϑ Coron. bor.]	15	29	ξ Urs. maj. C.	11	13		21	+12	+62
718	β Cygni	19	27	ι Geminor.	7	20		23	+49	+90
719	[γ Ophiuchi]	17	43	ϑ Hydrae	9	10		26	-33	+46
720	κ Scorpii N.	17	36	ψ Argus N.	9	27		31	-90	+2
721	67 Ophiuchi	17	56	ϑ Hydrae	9	10		33	-26	+41
722	β Cygni	19	27	β Geminor.	7	40		33	+43	+90
723	ι′ Scorpii N.	17	41	ψ Argus N.	9	27		34	-90	0
724	η Ophiuchi	17	5	μ Hydrae	10	22		43	-84	+35
725	ε Cygni	20	43	ϑ Geminor.	6	47		45	+55	+90
726	ζ Herculis N.	16	38	ξ Urs. maj. C.	11	13		55	+6	+73
727	ξ Serpentis	17	32	μ Hydrae	10	22	13	57	83	+32
728	κ Ophiuchi	16	53	ο Virginis	12	1	14	27	-26	+48
729	ε Ophiuchi	16	14	ϑ Virginis	13	5		40	-26	+15
730	γ Sagittarii	18	0	ξ Hydrae	11	29		44	-87	+3
731	η Herculis	16	40	12 Can. ven. sq.	12	52		46	+23	+61
732	67 Ophiuchi	17	56	β Virginis	11	46		51	-54	+61
733	ξ² Sagittar. N.	18	52	β Crateris	11	7	14	59	-90	+18
734	β Lyrae	18	47	ν Ursae maj.	11	14	15	0	-4	+90
735	72 Ophiuchi	18	3	ο Virginis	12	1		2	-41	+69
736	[ε Aquilae] N.	18	56	ϑ Leonis	11	10		3	-26	+80
737	γ Lyrae	18	56	ξ Urs. maj. C.	11	13		4	-8	+90
738	π Sagittarii	19	4	β Crateris	11	7		5	-90	+16
739	α Aquilae	19	46	[ϱ Leonis] N.	10	28		7	0	+49
740	κ Scorpii N.	17	36	κ Centauri C.	12	48		12	-70	-20
741	ι′ Scorpii N.	17	41	κ Centauri C.	12	48		14	-71	-21
742	[γ Ophiuchi]	17	43	δ Virginis	12	51		17	-34	+42
743	[ε Aquilae] N.	18	56	β Leonis	11	44		20	-32	+81
744	υ Scorpii N.	17	25	ι Centauri	13	16		20	-64	-18
745	λ Scorpii N.	17	27	ι Centauri	13	16		21	-64	-18
746	ξ² Sagittar. N.	18	52	ε Corvi	12	5	15	28	-90	+26

No.	Ost-Stern Name	α_o		West-Stern Name	α_w		$\frac{1}{2}(\alpha_o+\alpha_w)$		Grenzen in Breite	
747	γ Aquilae	19h	42m	[ι Leonis]	11h	19m	15h	30m	−23°	+68°
748	[β Capric.] N.	20	16	[ν Hydrae] N.	10	45		30	−73	−8
749	[κ Pegasi]	21	41	ε Leonis	9	41		41	+55	+90
750	η Sagittar. N.	18	12	ι Centauri N.	13	16		44	−70	−13
751	λ Scorpii N.	17	27	ϑ Centauri N.	14	1		44	−57	−20
752	[β Capric.] N.	20	16	δ Crateris	11	15		45	−75	+6
753	ε Cygni	20	43	[46 Leon. min.] A.	10	48		45	+13	+90
754	[γ Ophiuchi]	17	43	τ Virginis	13	57		50	−24	+29
755	α Delphini	20	35	ϑ Leonis	11	10		52	+5	+76
756	α Aquilae	19	46	ο Virginis	12	1		52	−35	+68
757	ε Delphini	20	29	[ε Leonis]	11	19		54	−3	+60
758	67 Ophiuchi	17	56	τ Virginis	13	57	15	56	−26	+32
759	η Sagittar. N.	18	12	ϑ Centauri N.	14	1	16	6	−64	−17
760	[ι Pegasi] N.	22	3	ζ Leonis	10	12		7	+54	+90
761	λ Sagittar. N.	18	22	π Hydrae N.	14	1		11	−58	−2
762	[δ Delphini]	20	39	β Leonis	11	44		11	−8	+76
763	[η Aquilae]	19	48	[γ Virgin. m.] N.	12	37		12	−53	+53
764	ζ Capricorni	21	22	β Crateris	11	7		14	−90	−22
765	φ Sagittarii N.	18	40	π Hydrae N.	14	1		20	−61	0
766	σ Sagittarii	18	50	π Hydrae N.	14	1		25	63	+1
767	110 Herculis	18	42	α Bootis	14	12		27	−7	+54
768	[γ Capric.] C.	21	35	[γ Crateris]	11	20		27	73	−33
769	γ Cygni	20	19	12 Can. ven. sq.	12	52		35	+9	+90
770	δ Aquilae	19	21	τ Virginis	13	57		39	42	+49
771	ζ Capricorni	21	22	ε Corvi	12	5		43	−90	−3
772	δ Sagittae	19	43	η Bootis	13	50		46	−22	+72
773	[ε Aquilae] N.	18	56	ζ Bootis m.	14	37		46	−14	+48
774	[γ Capric.] C.	21	35	[γ Corvi] N.	12	11		53	−80	−5
775	δ Capricorni	21	42	[γ Corvi] N.	12	11		56	−78	−8
776	β Lyrae	18	47	δ Bootis	15	12	16	59	+16	+57
777	[γ Capric.] C.	21	35	δ Corvi	12	25	17	0	−79	+1
778	α Equulei	21	11	δ Virginis	12	51		1	−34	+52
779	[τ Cygni] C.	21	11	12 Can. ven. sq.	12	52		1	−2	+90
780	δ Capricorni	21	42	δ Corvi	12	25		3	−77	−1
781	γ Lyrae	18	56	δ Bootis	15	12		4	+16	+58
782	c^2 Aquarii	23	5	β Crateris	11	7		6	−90	−66
783	c^2 Aquarii	23	5	ε Corvi	12	5		35	−90	−43
784	[δ Delphini]	20	39	ζ Bootis	14	37		38	−32	+72
785	γ Cygni	20	19	β Bootis	14	59		39	+19	+76
786	β Cygni	19	27	ε Coron. bor.	15	54		40	+8	+51
787	δ Sagittae	19	43	κ Serpentis	15	45		44	−6	+47
788	β Aquilae	19	51	α Serpentis	15	40		45	−23	+38
789	ζ Pegasi	22	37	ε Virginis	12	58		47	+21	+44
790	[τ Cygni] C.	21	11	γ Bootis	14	28		49	+11	+90
791	γ Sagittae	19	55	κ Serpentis	15	45		50	−6	+50
792	π Androm.	0	32	ν Ursae maj.	11	14		53	+52	+90
793	ν Cygni	20	54	β Bootis	14	59		56	+19	+83
794	β Androm.	1	5	[46 Leon. min.] A.	10	48	17	56	+56	+90
795	c^2 Aquarii	23	5	γ Hydrae	13	14	18	9	−90	−14
796	[δ Delphini]	20	39	β Serpentis	15	42	18	10	−18	+56

No.	Ost-Stern Name	α_o		West-Stern Name	α_w		$\frac{1}{2}(\alpha_o+\alpha_w)$		Grenzen in Breite	
797	[τ Cygni] C.	21ʰ	11ᵐ	μ Bootis	15ʰ	21ᵐ	18ʰ	16ᵐ	+14°	+78°
798	[γ Piscium] N.	23	12	τ Virginis	13	57		34	− 5	+17
799	ζ Capricorni	21	22	δ Scorpii	15	55		38	−68	+10
800	μ Androm.	0	52	12 Can. ven. sq.	12	52		52	+34	+90
801	[γ Piscium] N.	23	12	109 Virginis	14	42	18	57	−33	+45
802	[τ Cygni] C.	21	11	π Herculis	17	12	19	11	+19	+63
803	γ Pegasi	0	9	ζ Bootis m.	14	37		23	+10	+66
804	α Equulei	21	11	β Ophiuchi	17	39		25	−19	+30
805	[κ Pegasi]	21	41	δ Herculis	17	11		26	0	+59
806	β Pegasi	22	59	ε Coron. bor.	15	54		26	−16	+90
807	[τ Cygni] C.	21	11	ϑ Herculis	17	53		32	+29	+52
808	γ Gruis N.	21	48	υ Scorpii N.	17	25		36	−66	−18
809	[ι Pegasi] N.	22	3	δ Herculis	17	11		37	− 2	+62
810	γ Gruis N.	21	48	λ Scorpii N.	17	27		37	−65	−17
811	μ Androm.	0	52	γ Bootis	14	28		40	+17	+90
812	ι Aquarii	22	2	ξ Serpentis	17	32		47	−50	+15
813	[τ Piscium]	1	7	ρ Bootis	14	28		47	+24	+90
814	ω Piscium	23	55	α Serpentis	15	40		47	−32	+60
815	[γ Piscium] N.	23	12	[λ Ophiuchi] N.	16	26		49	−52	+62
816	ϑ Eridani N.	2	55	κ Centauri C.	12	48		51	−90	−48
817	π Androm.	0	32	δ Bootis	15	12		52	+ 6	+90
818	[μ Pegasi] N.	22	46	δ Herculis	17	11		58	− 8	+71
819	δ Androm.	0	35	β Coron. bor.	15	24	19	59	+ 3	+90
820	γ Gruis N.	21	48	η Sagittar. N.	18	12	20	0	−59	−20
821	μ Androm.	0	52	μ Bootis	15	21		6	+10	+90
822	[τ Piscium]	1	7	β Coron. bor.	15	24		15	+ 9	+90
823	ε Piscium	0	58	α Serpentis	15	40		19	+ 1	+33
824	ε Persei	3	52	12 Can. ven. sq.	12	52		22	+55	+90
825	[γ Piscium] N.	23	12	[γ Ophiuchi]	17	43		27	−42	+51
826	[γ Piscium] N.	23	12	67 Ophiuchi	17	56		34	−39	+48
827	η Piscium	1	27	β Serpentis	15	42		34	+18	+69
828	α Trianguli	1	48	β Coron. bor.	15	24		36	+20	+90
829	c^2 Aquarii	23	5	μ Sagittarii	18	8		36	−60	+ 9
830	β Trianguli	2	4	δ Bootis	15	12		38	+24	+90
831	η Piscium	1	27	[γ Serpentis] N.	15	52		39	+11	+76
832	ϑ Eridani N.	2	55	η Centauri N.	14	30		42	−90	−35
833	μ Androm.	0	52	η Herculis	16	40		46	− 2	+90
834	[γ Arietis]	1	49	κ Serpentis	15	45		47	+22	+83
835	[η Ceti] C.	1	4	ζ Ophiuchi	16	32		48	−65	+20
836	ϑ Eridani N.	2	55	κ Centauri N.	14	53		54	90	−31
837	υ Ceti	1	56	δ Scorpii	15	55		55	−90	18
838	α Pegasi	23	0	[ε Aquilae] N.	18	56		58	−11	+46
839	c^2 Aquarii	23	5	ξ^2 Sagittar. N.	18	52		58	−52	+ 4
840	τ^3 Eridani C.	2	58	γ Scorpii	14	59	20	58	−90	−56
841	β Persei	3	2	β Bootis	14	59	21	0	+31	+90
842	μ Androm.	0	52	π Herculis	17	12		2	+ 2	+90
843	[γ Arietis]	1	49	γ Herculis	16	18		3	+ 6	+87
844	β Arietis	1	50	γ Herculis	16	18		4	+ 7	+90
845	c^2 Aquarii	23	5	π Sagittarii	19	4	21	4	50	+ 3

No.	Ost-Stern Name	α_o		West-Stern Name	α_w		$\frac{1}{2}(\alpha_o+\alpha_w)$		Grenzen in Breite	
846	ξ Piscium	1h	49m	[λ Ophiuchi] N.	16h	26m	21h	7m	0°	+ 13°
847	41 Arietis	2	45	α Coron. bor.	15	31		8	+ 36	+ 90
848	ζ Persei	3	48	ρ Bootis	14	28		8	+ 56	+ 90
849	ζ Ceti	1	47	ζ Ophiuchi	16	32		9	− 58	+ 1
850	ε Persei	3	52	γ Bootis	14	28		10	+ 45	+ 90
851	ρ Persei	2	59	μ Bootis	15	21		10	+ 30	+ 90
852	41 Arietis	2	45	[γ Coron. bor.]	15	39		12	+ 34	+ 90
853	[γ Piscium] N.	23	12	δ Aquilae	19	21		16	− 24	+ 31
854	41 Arietis	2	45	ε Coron. bor.	15	54		19	+ 30	+ 90
855	α Sculptor. N.	0	54	γ Sagittarii	18	0		27	− 90	+ 8
856	[τ Piscium]	1	7	[ξ Herculis]	17	54		30	− 12	+ 90
857	γ Pegasi	0	9	[ε Aquilae] N.	18	56		32	− 21	+ 59
858	[o Persei]	3	39	[ϑ Coron. bor.]	15	29		34	+ 46	+ 90
859	α Sculptor. N.	0	54	δ Sagittar. N.	18	15		34	− 90	+ 6
860	[τ Piscium]	1	7	o Herculis	18	4		35	− 11	+ 90
861	ϑ Ceti	1	20	ν Ophiuchi	17	54		37	− 69	+ 38
862	ζ Persei	3	48	[ϑ Coron. bor.]	15	29		38	+ 44	+ 90
863	π Androm.	0	32	β Lyrae	18	47		39	+ 6	+ 77
864	μ Androm.	0	52	α Lyrae	18	34		43	+ 13	+ 86
865	π Androm.	0	32	γ Lyrae	18	56		44	+ 6	+ 76
866	ξ Piscium	1	49	[γ Ophiuchi]	17	43		46	− 40	+ 52
867	ρ Persei	2	59	η Herculis	16	40		49	+ 16	+ 90
868	ξ Piscium	1	49	67 Ophiuchi	17	56		52	− 43	+ 54
869	ω Piscium	23	55	β Aquilae	19	51		53	− 23	+ 37
870	α Sculptor. N.	0	54	ζ Sagittar. N.	18	57		55	− 80	0
871	η Aurigae	5	0	β Bootis	14	59	21	59	+ 47	+ 90
872	ι Aurigae	4	51	δ Bootis	15	12	22	1	+ 55	+ 90
873	π Ceti	2	40	ζ Serpentis	17	32		6	− 75	+ 3
874	[ν Aurigae] A.	5	45	γ Bootis	14	28		6	+ 56	+ 90
875	τ^3 Eridani C.	2	58	ϑ Ophiuchi	17	16		7	− 90	− 11
876	η Piscium	1	27	[ε Aquilae] N.	18	56		11	− 36	+ 81
877	ζ Persei	3	48	ζ Herculis N.	16	38		13	+ 30	+ 90
878	ε Persei	3	52	η Herculis	16	40		16	+ 25	+ 90
879	β Arietis	1	50	110 Herculis	18	42		16	− 26	+ 90
880	[γ Ceti] N.	2	39	67 Ophiuchi	17	56		17	− 28	+ 42
881	ϑ Eridani N.	2	55	ι^1 Scorpii N.	17	41		18	− 90	− 7
882	α Ceti	2	58	β Ophiuchi	17	39		18	+ 1	+ 18
883	α Ceti	2	58	[γ Ophiuchi]	17	43		20	− 5	+ 20
884	μ Ceti	2	40	72 Ophiuchi	18	3		21	− 19	+ 61
885	η Eridani	2	52	ν Ophiuchi	17	54		23	− 58	+ 10
886	υ Ceti	1	56	ξ^2 Sagittar. N.	18	52		24	− 90	+ 26
887	γ Pegasi	0	9	[δ Delphini]	20	39		24	− 7	+ 40
888	α Ceti	2	58	67 Ophiuchi	17	56		27	− 18	+ 33
889	[27 Tauri]	3	44	δ Herculis	17	11		27	+ 27	+ 90
890	υ^4 Eridani N.	4	14	ε Scorpii N.	16	44		29	− 90	− 32
891	υ Ceti	1	56	π Sagittarii	19	4		30	− 90	+ 27
892	d Eridani C.	4	21	ε Scorpii N.	16	44		32	− 90	− 33
893	12 Eridani	3	8	γ Sagittarii	18	0		34	− 90	− 3
894	π Androm.	0	32	ε Cygni	20	43		37	+ 16	+ 57
895	ϑ Aurigae	5	54	μ Bootis	15	21		37	+ 54	+ 90
896	o Tauri	3	20	72 Ophiuchi	18	3	22	41	− 1	+ 50

Tafel Ib.

No.	Ost-Stern Name	α_o		West-Stern Name	α_w		$\frac{1}{2}(\alpha_o+\alpha_w)$		Grenzen in Breite	
897	[ξ Tauri] C.	3h	22m	72 Ophiuchi	18h	3m	22h	42m	+ 1°	+ 50°
898	ρ Persei	2	59	α Lyrae	18	34		46	0	+ 90
899	[γ Arietis]	1	49	γ Sagittae	19	55		52	− 22	+ 72
900	δ Androm.	0	35	ζ Cygni	21	9	22	52	+ 13	+ 52
901	μ Androm.	0	52	[τ Cygni] C.	21	11	23	1	+ 22	+ 60
902	12 Eridani	3	8	ζ Sagittar. N.	18	57		2	− 90	+ 8
903	η Piscium	1	27	[δ Delphini]	20	39		3	− 17	+ 54
904	[τ Piscium]	1	7	ζ Cygni	21	9		8	+ 10	+ 56
905	α Columb. N.	5	36	ε Scorpii N.	16	44		10	− 90	− 47
906	μ Ceti	2	40	γ Aquilae	19	42		11	− 41	+ 73
907	δ Ceti	2	35	[η Aquilae]	19	48		11	− 57	+ 57
908	[ν Aurigae] A.	5	45	η Herculis	16	40		12	+ 42	+ 90
909	μ Ceti	2	40	α Aquilae	19	46		13	− 43	+ 71
910	ε Persei	3	52	α Lyrae	18	34		13	+ 7	+ 90
911	f Tauri	3	26	ρ Aquilae	19	1		13	− 19	+ 73
912	v^4 Eridani N.	4	14	ε Sagittar. N.	18	18		16	− 90	− 37
913	[o Persei]	3	39	γ Lyrae	18	56		17	2	+ 90
914	d Eridani C.	4	21	ε Sagittar. N.	18	18		19	− 90	− 14
915	ζ Persei	3	48	γ Lyrae	18	56		22	+ 2	+ 90
916	β Trianguli	2	4	ε Cygni	20	43		23	+ 10	+ 73
917	π Ceti	2	40	[β Capric.] N.	20	16		28	− 80	+ 37
918	β Tauri	5	21	μ Herculis	17	43		32	+ 42	+ 90
919	ϑ Aurigae	5	54	π Herculis	17	12		33	+ 41	+ 90
920	[γ Tauri] N.	4	15	[ε Aquilae] N.	18	56		35	+ 2	+ 73
921	β Tauri	5	21	[ξ Herculis]	17	54		37	+ 36	+ 90
922	β Persei	3	2	γ Cygni	20	19		40	+ 15	+ 90
923	[β Leporis] N.	5	24	μ Sagittarii	18	8		46	− 90	− 55
924	ι Aurigae	4	51	γ Lyrae	18	56		53	+ 14	+ 90
925	ϑ Aurigae	5	54	ϑ Herculis	17	53		53	+ 39	+ 90
926	ζ Tauri	5	32	109 Herculis	18	20		56	+ 50	+ 90
927	α Columb. N.	5	36	ε Sagittar. N.	18	18		57	− 90	− 30
928	β Persei	3	2	ν Cygni	20	54	23	58	+ 19	+ 83

Tafel II. Tafel der Werte Φ.

Die nachstehende Tafel findet Verwendung, wenn man nach den in Tafel Ia gegebenen Sternpaaren Azimutbestimmungen machen will. Für diese Bestimmungen muß angestrebt werden, daß der parallaktische Winkel p des Sternes möglichst nahe an 90° oder 270° liegt. In nachstehender Tafel ist zu jedem der Sternpaare in Tafel Ia die Breite Φ angegeben, in welcher im Augenblick gleichen Zenitabstandes beider Sterne für jeden von ihnen der parallaktische Winkel = 90° bzw. 270° ist.

Für Azimutbeobachtungen wähle man also ein solches Sternpaar aus, dessen Wert Φ der Breite des Beobachtungsortes möglichst nahe liegt. Benutzt man zur Azimutbestimmung zwei verschiedene Sternpaare, so suche man zwei solche aus, deren Φ von der Breite des Beobachtungsortes möglichst wenig, aber möglichst gleichmäßig nach beiden Seiten hin abweicht.

0h		1h		2h		3h		4h		5h		6h		7h	
No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ
1	+ 8°	16	+ 8°	33	− 1°	46	−15°	59	+22°	68	+23°	84	+ 2°	96	+ 9°
2	− 7	17	−26	34	+20	47	+14	60	+20	69	−26	85	+12	97	− 5
3	− 6	18	+19	35	− 7	48	− 7	61	+20	70	+19	86	− 6	98	+ 6
4	+ 9	19	− 4	36	−15	49	+13	62	−13	71	−26	87	+ 5	99	+13
5	− 6	20	3	37	+13	50	− 8	63	+16	72	− 2	88	− 3	100	+13
6	+27	21	0	38	+13	51	−14	64	+18	73	− 4	89	+ 7	101	− 7
7	−12	22	− 3	39	+ 5	52	− 8	65	+22	74	+ 7	90	+ 7	102	+19
8	+27	23	− 9	40	+23	53	+26	66	− 3	75	+ 8	91	− 3	103	− 8
9	+ 7	24	+ 4	41	− 7	54	+19	67	+ 4	76	+ 7	92	+28	104	+ 4
10	+ 7	25	+ 4	42	− 9	55	− 9			77	−19	93	+18	105	− 8
11	+ 8	26	0	43	+ 5	56	+ 3			78	+21	94	+ 8	106	+11
12	+20	27	− 1	44	+10	57	−19			79	−21	95	+16		
13	− 4	28	− 1	45	− 7	58	+16			80	+ 7				
14	+24	29	− 1							81	+ 8				
15	+23	30	− 1							82	+13				
		31	− 7							83	− 5				
		32	0												

8h		9h		10h		11h		12h		13h		14h		15h	
No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ
107	+24°	125	0°	146	+ 8°	158	+ 6°	168	+13°	183	+30°	198	−20°	211	+19°
108	−16	126	+18	147	− 2	159	− 4	169	− 2	184	− 5	199	+ 2	212	−16
109	+ 4	127	− 1	148	+ 8	160	+15	170	+ 4	185	+ 6	200	−10	213	+10
110	−12	128	−10	149	− 4	161	−15	171	+ 4	186	+14	201	+ 5	214	+ 3
111	+15	129	−15	150	−20	162	+ 7	172	− 2	187	+13	202	−10	215	+ 3
112	+16	130	−11	151	+ 8	163	−16	173	− 2	188	+13	203	+11	216	+ 2
113	+ 5	131	+14	152	−17	164	+ 7	174	− 6	189	−18	204	+14	217	−14
114	−11	132	+19	153	+12	165	+ 2	175	+ 8	190	+ 6	205	+13	218	− 8
115	−14	133	−13	154	+ 7	166	+ 5	176	− 8	191	+15	206	+ 2	219	+31
116	−11	134	+ 6	155	− 8	167	−11	177	+ 4	192	+13	207	−13	220	+ 5
117	− 6	135	+ 6	156	+10			178	− 9	193	+ 7	208	+12	221	+12
118	−14	136	−13	157	+17			179	+ 8	194	+17	209	+ 3		
119	−13	137	−13					180	−14	195	+13	210	−12		
120	−11	138	0					181	−14	196	+ 5				
121	+13	139	0					182	+ 6	197	−11				
122	0	140	− 6												
123	−15	141	−12												
124	0	142	+ 2												
		143	−18												
		144	− 5												
		145	+13												

16h		17h		18h		19h		20h		21h		22h		23h	
No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ	No.	Φ
222	0°	239	− 6°	252	0°	267	− 5°	283	+11°	300	+12°	318	−12°	335	+ 2°
223	+ 2	240	+ 2	253	− 4	268	+18	284	−12	301	− 6	319	+ 5	336	+12
224	+ 6	241	+14	254	+17	269	+16	285	+25	302	+21	320	+ 1	337	+12
225	+ 6	242	−12	255	+13	270	+ 8	286	− 2	303	− 4	321	+11	338	− 8
226	0	243	+24	256	−10	271	+16	287	− 8	304	+25	322	+10	339	+17
227	+ 7	244	−12	257	+13	272	+ 9	288	+ 8	305	+20	323	− 2	340	+ 2
228	− 8	245	+24	258	+23	273	−13	289	+22	306	+ 7	324	+13	341	− 8
229	− 1	246	+10	259	+ 4	274	−13	290	+25	307	+25	325	+14	342	0
230	+35	247	0	260	+36	275	+ 8	291	− 5	308	− 7	326	− 4	343	+25
231	− 4	248	+21	261	+16	276	− 4	292	−25	309	− 6	327	+ 5	344	+ 5
232	0	249	− 3	262	− 9	277	+13	293	+23	310	+11	328	− 9	345	+ 5
233	+ 6	250	+27	263	− 8	278	+ 7	294	−25	311	− 8	329	+ 2	346	+ 5
234	0	251	− 7	264	+ 7	279	+ 8	295	+ 9	312	− 5	330	− 3	347	−15
235	+12			265	+ 4	280	+ 4	296	− 5	313	+24	331	−13	348	−14
236	− 4			266	+ 4	281	+ 7	297	+20	314	+14	332	+13	349	+ 3
237	+14					282	−12	298	−27	315	− 5	333	+14	350	− 7
238	−10							299	+21	316	+16	334	− 9	351	+ 3
										317	+16				

Tafel III.

Verzeichnis von Sternpaaren zur Bestimmung der Breite aus gleichen Höhen für die Breiten von $-10°$ bis $+20°$.

Erläuterung.

Spalte 1 enthält die Frühlingspunkts-Orts-Zeit, zu der der 1. Stern die in Spalte 5 angeführte Höhe auf der ebenfalls in Spalte 5 angegebenen Seite des Meridians (Ost oder West) erreicht. 10 Minuten später kommt der 2. Stern in dieselbe Höhe.

Die angegebene Frühlingspunkts-Orts-Zeit gilt für die südlichere der beiden am Kopf einer jeden Seite angegebenen Breiten. Z. B. erreicht der 1. Stern des 1. Paares auf Seite 51 die Höhe 52.5° in der Südbreite 10.0° (— 10.0°) zur Frühlingspunkts-Orts-Zeit 0^h 10^m. Der erste Stern des 1. Paares auf Seite 74 erreicht die Höhe 41.8° in der Nordbreite 1.5° (+1.5°) zur Frühlingspunkts-Orts-Zeit 0^h 1^m.

Spalte 2 gibt die Änderung der Frühlingspunkts-Orts-Zeit in Spalte 1, wenn man die geographische Breite um +0.1° ändert, d. i. wenn der Beobachter sich um 0.1° weiter nördlich befindet, als die südlichere Grenzbreite angibt. Mit Hilfe dieser Änderung ist die Frühlingspunkts-Orts-Zeit für die zwischen den Grenzen liegenden Breiten zu berechnen, wie die unten folgenden Beispiele zeigen.

Spalte 3 und 4 enthalten Nummer und Größe des 1. und 2. zu beobachtenden Sterns. Die Nummern stimmen mit denen des Sternverzeichnisses (Anhang zu Tafel III) überein, so daß dort Namen und Örter der Sterne entnommen werden können. Runde Klammern um die Größenzahl bedeuten, daß der Stern veränderlich ist; die angegebene Größe ist dann ein durchschnittlicher Wert.

Spalte 5 enthält die Seite des Meridians, auf der das Paar zu beobachten ist, und die Höhe, die es bei der Beobachtung hat.

Beispiele.

1. Der Beobachter befindet sich auf 9.2° Südbreite und will um etwa 11^h Frühlingspunkts-Orts-Zeit Breitenpaare beobachten. Auf der

Seite, die die Breiten von — 9.5° bis — 9.0° enthält, findet er die Frühlingspunkts-Orts-Zeit 11^h 5^m mit der Änderung — 2.8^m. Da er sich 0.3° nördlich von der südlicheren der beiden Grenzbreiten befindet [— 9.2° — (— 9.5°) = + 0.3°], hat er zu multiplizieren 3 × (— 2.8^m) = — 8.4^m. Der erste Stern erreicht daher auf der Breite — 9.2° um 11^h 5^m — 8^m = 10^h 57^m Frühlingspunkts-Orts-Zeit die zur Beobachtung geeignete Höhe. Der zweite Stern kommt 10^m später in dieselbe Höhe. Das Paar wird östlich vom Meridian beobachtet und besteht aus dem Stern 2.8 Gr. Nr. 818 und dem Stern 1.0 Gr. Nr. 780. Nach Anhang zu Tafel III ist 12 Canum venaticorum der erste und α^1 Crucis der zweite Stern, deren Örter ebenfalls aus dem Anhang zu entnehmen sind.

Das nächste in Betracht kommende Paar hat die Frühlingspunkts-Orts-Zeit 11^h 21^m mit der Änderung + 4.8^m. Da der Beobachter sich 0.3° nördlich von der südlicheren Grenzbreite befindet, hat er zu multiplizieren 3 × (+ 4.8^m) = + 14.4^m. Der erste Stern muß daher auf der Breite — 9.2° um 11^h 21^m + 14^m = 11^h 35^m Frühlingspunkts-Orts-Zeit beobachtet werden. Das Paar steht westlich vom Meridian und besteht aus den Sternen Nr. 647 (λ Ursae majoris nach Anhang zu Tafel III) und Nr. 684 (θ Argus).

2. Der Beobachter befindet sich auf 1.7° Nordbreite und will um etwa 21^h Frühlingspunkts-Orts-Zeit beobachten. Er findet auf der Seite, die die Breiten von + 1.5° bis + 2.0° enthält, die Frühlingspunkts-Orts-Zeit 20^h 50^m mit der Änderung — 5.0^m. Da er sich um 0.2° nördlicher befindet als die südliche Grenzbreite [+ 1.7° — (+ 1.5°) = + 0.2°], so hat er zu multiplizieren 2 × (— 5.0^m) = — 10.0^m. Er muß daher um 20^h 50^m — 10.0^m = 20^h 40^m Frühlingspunkts-Orts-Zeit die Beobachtung des ersten Sterns beginnen. Die Sterne sind Nr. 1231 (π Sagittarii nach Anh. z. Taf. III) und Nr. 1259 (β Cygni, Anh. z. Taf. III) und stehen bei der Beobachtung westlich vom Meridian.

Die nächste Frühlingspunkts-Orts-Zeit in Tafel III ist 21^h 2^m mit der Änderung + 1.4^m. Es ist also zu multiplizieren 2 × (+ 1.4^m) = + 2.8^m und die Beobachtung zu beginnen um 21^h 2^m + 3^m = 21^h 5^m Frühlingspunkts-Orts-Zeit. Das Paar steht westlich vom Meridian. Der erste Stern ist Nr. 1265 oder nach Anh. z. Taf. III h Sagittarii 4.6 Gr., der zweite Nr. 1226 oder ζ Aquilae 3.0 Gr.

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 10	− 3.2	91	3.2	121	2.7	O 52.5	12 18	− 2.0	893	1.0	871	2.6	O 49.3
0 26	+ 4.0	124	3.6	71	2.1	O 44.4	12 25	+ 2.6	712	2.4	746	4.8	W 53.8
0 45	− 2.8	134	3.0	101	1.0	O 41.8	12 44	+ 1.6	953	3.4	893	1.0	O 54.8
0 58	+ 3.6	1568	4.1	16	4.2	W 33.8	13 3	− 4.8	912	2.9	917	1.0	O 37.4
1 11	− 2.4	178	3.6	144	3.5	O 46.7	13 19	− 2.8	857	2.4	910	3.7	O 46.9
1 22	− 3.6	91	3.2	133	2.0	O 56.2	13 24	− 4.8	881	1.0	912	2.9	O 39.8
1 39	− 1.8	244	2.9	194	5.1	O 38.2	13 42	− 3.8	912	2.9	881	1.0	O 40.2
1 48	+ 4.4	210	4.2	178	3.6	O 51.4	14 1	+ 2.0	839	2.9	821	2.8	W 61.9
2 4	+ 3.2	101	1.0	71	2.1	W 41.9	14 17	− 1.4	998	3.4	948	2.7	O 56.6
2 19	− 1.0	94	3.6	39	2.2	W 62.1	14 37	− 6.0	839	2.9	872	2.8	W 57.9
2 29	+ 3.8	71	2.1	101	1.0	W 40.6	14 57	+ 1.8	948	2.7	893	1.0	W 57.2
2 47	+ 3.0	144	3.5	118	3.5	W 47.4	15 14	+ 2.6	893	1.0	948	2.7	W 56.5
3 12	− 2.0	291	3.2	343	1.8	O 42.1	15 33	+ 4.0	917	1.0	912	2.9	W 38.2
3 16	+ 3.6	118	3.5	144	3.5	W 45.5	15 53	+ 2.0	920	2.4	893	1.0	W 49.6
3 34	− 1.8	343	1.8	291	3.2	O 43.8	16 12	+ 3.4	952	3.3	1004	2.9	W 36.6
3 50	− 3.8	271	3.2	319	3.3	O 37.0	16 30	− 1.4	998	3.4	953	3.4	W 61.8
4 9	+ 2.0	411	2.9	362	3.0	O 54.0	16 49	+ 5.2	1123	2.1	1158	3.0	O 65.1
4 19	− 1.8	382	1.0	368	2.4	O 61.5	16 53	+ 0.8	1073	2.3	1003	3.5	W 65.9
4 40	+ 1.6	243	4.1	213	3.6	W 60.8	17 10	+ 1.2	1003	3.5	1073	2.3	W 64.5
4 45	+ 3.8	451	1.5	427	2.0	O 54.3	17 29	+ 3.8	1068	1.9	1036	3.6	W 30.6
5 4	+ 2.2	460	1.9	427	2.0	O 57.2	17 46	+ 2.4	1160	3.6	1199	3.3	O 70.0
5 21	− 1.4	288	1.0	239	4.1	W 61.0	18 6	+ 1.4	1118	1.7	1084	3.2	W 61.6
5 35	+ 3.8	248	3.0	271	3.2	W 34.8	18 26	+ 2.8	1107	2.7	1088	3.6	W 42.6
6 14	+ 4.0	431	3.1	483	3.0	O 54.2	18 38	+ 2.0	1084	3.2	1118	1.7	W 57.2
6 32	− 3.2	429	3.1	471	3.3	O 56.8	18 55	− 2.0	1324	1.9	1389	3.1	O 40.3
6 48	+ 3.8	471	3.3	519	2.2	O 57.0	19 8	+ 2.0	1175	1.9	1160	3.6	W 62.9
7 3	− 2.4	460	1.9	492	0.5	O 73.8	19 26	− 4.4	1303	3.5	1352	1.3	O 33.2
7 18	+ 2.2	441	3.2	388	2.7	W 37.9	19 41	− 3.8	1352	1.3	1303	3.5	O 33.6
7 36	+ 2.6	388	2.7	441	3.2	W 37.0	19 48	+ 1.2	1403	3.8	1344	3.5	O 64.2
7 53	− 4.6	412	2.9	379	2.9	W 50.0	20 17	− 2.4	1286	1.0	1265	4.6	W 69.8
8 4	− 1.8	606	3.6	642	1.3	O 54.9	20 34	− 3.6	1182	2.8	1226	3.0	W 55.2
8 24	+ 2.8	525	2.1	495	3.4	W 52.9	20 47	+ 1.6	1226	3.0	1289	4.1	W 54.7
8 38	+ 2.2	471	3.3	525	2.1	W 51.9	20 58	− 1.6	1434	3.0	1499	3.3	O 59.9
8 58	− 3.2	657	3.0	627	3.0	O 35.0	21 18	− 1.2	1499	3.3	1434	3.0	O 61.8
9 13	+ 1.8	535	1.7	484	1.8	W 39.8	21 36	+ 1.6	1341	3.0	1297	3.6	W 50.0
9 19	+ 2.4	556	3.9	606	3.6	W 59.9	21 47	+ 1.6	1396	4.9	1344	3.5	W 58.0
9 34	+ 2.2	484	1.8	535	1.7	W 38.4	21 57	− 1.8	1563	4.9	10	2.7	O 51.2
9 55	+ 5.6	569	2.9	591	1.7	W 30.0	22 1	+ 2.8	1525	2.4	1581	4.4	O 61.4
10 3	+ 4.2	591	1.7	576	3.3	W 30.2	22 19	+ 1.8	39	2.2	10	2.7	O 55.3
10 19	+ 1.2	786	2.8	744	2.1	O 58.8	22 32	+ 1.6	1581	4.4	1525	2.4	O 64.8
10 36	+ 3.6	760	2.7	718	3.4	O 45.8	22 51	+ 1.4	1451	1.8	1399	4.2	W 51.1
10 55	− 3.2	780	1.0	818	2.8	O 35.2	22 59	− 4.0	1501	2.9	1451	1.8	W 50.0
11 12	− 5.6	606	3.6	648	3.4	W 51.9	23 19	+ 3.4	91	3.2	36	3.2	O 46.6
11 30	+ 2.2	688	2.7	648	3.4	W 49.9	23 29	+ 2.6	10	2.7	58	4.1	O 63.4
11 41	+ 4.2	657	3.0	684	2.8	W 34.6	23 40	+ 2.0	127	3.9	94	3.6	O 55.5
12 0	+ 2.6	648	3.4	688	2.7	W 47.0	23 53	− 1.8	66	3.2	121	2.7	O 49.9

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 9	− 1.6	121	2.7	66	3.2	O 51.2	12 16	− 4.6	800	2.3	830	4.2	O 50.8
0 30	− 2.2	121	2.7	91	3.2	O 54.4	12 38	+ 2.6	712	2.4	746	4.8	W 52.4
0 41	+ 2.4	179	4.4	133	2.0	O 53.2	12 52	+ 1.6	953	3.4	893	1.0	O 55.9
0 59	− 2.2	178	3.6	144	3.5	O 45.6	13 2	2.2	966	3.2	917	1.0	O 36.8
1 16	+ 3.2	1568	4.1	16	4.2	W 32.7	13 20	− 2.4	910	3.7	857	2.4	O 46.4
1 30	− 2.0	244	2.9	194	5.1	O 37.2	13 40	− 1.4	882	3.4	932	3.7	O 72.5
1 45	− 2.0	94	3.6	58	4.1	W 65.0	13 58	− 2.4	998	3.4	984	2.9	O 53.8
2 10	+ 4.0	210	4.2	178	3.6	O 53.2	14 17	+ 1.0	882	3.4	852	3.3	W 72.8
2 20	+ 3.0	101	1.0	71	2.1	W 41.2	14 38	− 2.6	1004	2.9	1069	3.3	O 34.9
2 38	− 6.0	58	4.1	94	3.6	W 58.4	14 55	+ 1.6	1051	1.2	998	3.4	O 63.2
2 55	+ 5.8	129	2.9	131	2.1	W 36.4	15 6	+ 2.0	948	2.7	893	1.0	W 56.5
3 2	− 2.2	291	3.2	343	1.8	O 41.0	15 21	− 2.4	1084	3.2	1073	2.3	O 60.2
3 25	− 1.8	343	1.8	291	3.2	O 42.8	15 41	− 2.8	1123	2.1	1118	1.7	O 55.1
3 34	+ 3.2	118	3.5	144	3.5	W 43.8	16 1	− 1.8	1118	1.7	1160	3.6	O 56.3
3 52	− 3.8	187	2.9	238	3.0	W 56.2	16 12	+ 2.8	1004	2.9	952	3.3	W 36.2
4 10	− 2.0	382	1.0	368	2.4	O 59.8	16 31	− 2.2	1193	1.0	1129	3.5	O 34.0
4 19	+ 2.0	411	2.9	362	3.0	O 55.7	16 36	− 1.8	1073	2.3	1123	2.1	O 65.4
4 48	+ 1.6	243	4.1	213	3.6	W 59.5	16 57	+ 1.0	1073	2.3	1003	3.5	W 65.2
5 4	+ 3.4	451	1.5	427	2.0	O 57.8	17 13	− 3.8	1051	1.2	1084	3.2	W 69.7
5 15	+ 2.2	460	1.9	427	2.0	O 59.2	17 16	+ 1.0	1003	3.5	1073	2.3	W 63.5
5 28	+ 2.6	244	2.9	291	3.2	W 42.4	17 40	− 1.6	1228	4.1	1286	1.0	O 55.9
5 46	+ 2.4	460	1.9	433	3.4	O 65.1	17 48	+ 3.6	1068	1.9	1036	3.6	W 29.6
6 1	− 2.4	239	4.1	288	1.0	W 54.2	18 9	− 1.2	1286	1.0	1228	4.1	O 59.7
6 13	+ 1.2	342	1.7	411	2.9	W 69.5	18 18	+ 2.0	1123	2.1	1175	1.9	W 65.0
6 30	− 1.8	451	1.5	492	0.5	O 69.8	18 29	+ 2.2	1129	3.5	1069	3.3	W 34.0
6 50	+ 3.4	429	3.1	412	2.9	W 56.2	18 48	+ 1.8	1084	3.2	1118	1.7	W 55.6
7 8	+ 2.8	427	2.0	470	2.5	W 62.6	19 8	1.8	1389	3.1	1324	1.9	O 41.0
7 23	+ 5.0	412	2.9	429	3.1	W 54.0	19 22	− 3.4	1352	1.3	1303	3.5	O 32.8
7 40	− 2.8	519	2.2	556	3.9	O 59.4	19 29	− 1.6	1226	3.0	1182	2.8	W 65.6
7 59	+ 3.6	483	3.0	471	3.3	W 55.6	19 54	+ 1.2	1403	3.8	1344	3.5	O 65.1
8 11	+ 1.8	427	2.0	483	3.0	W 54.6	20 5	− 2.6	1286	1.0	1265	4.6	W 71.0
8 29	+ 1.6	525	2.1	471	3.3	W 52.0	20 16	− 3.4	1182	2.8	1226	3.0	W 58.7
8 49	+ 2.0	471	3.3	525	2.1	W 50.8	20 31	+ 1.4	1289	4.1	1226	3.0	W 56.0
9 7	+ 3.4	495	3.4	525	2.1	W 49.7	20 50	− 1.6	1434	3.0	1499	3.3	O 58.8
9 22	+ 2.0	535	1.7	484	1.8	W 38.9	21 6	− 0.8	1297	3.6	1227	3.2	W 56.2
9 31	+ 2.4	556	3.9	606	3.6	W 59.2	21 12	− 1.2	1499	3.3	1434	3.0	O 60.9
9 49	+ 6.0	597	2.5	595	3.2	W 44.5	21 33	+ 1.6	1324	1.9	1259	3.0	W 40.3
10 5	+ 2.4	744	2.1	792	2.6	O 55.2	21 49	+ 4.4	1352	1.3	1400	4.2	W 33.2
10 25	+ 1.0	786	2.8	744	2.1	O 59.8	22 9	− 5.8	1500	2.0	1523	2.4	O 51.6
10 44	− 4.8	606	3.6	648	3.4	W 55.2	22 28	+ 1.6	39	2.2	10	2.7	O 57.0
10 53	+ 1.4	792	2.6	744	2.1	O 63.4	22 40	+ 1.4	1581	4.4	1525	2.4	O 65.8
11 5	− 2.8	818	2.8	780	1.0	O 35.6	22 58	+ 1.6	1451	1.8	1399	4.2	W 50.4
11 21	+ 4.8	647	3.4	684	2.8	W 34.8	23 15	+ 5.8	1499	3.3	1516	1.2	W 68.2
11 35	+ 3.6	684	2.8	657	3.0	W 34.7	23 36	+ 3.2	91	3.2	36	3.2	O 48.6
11 52	− 4.8	818	2.8	808	1.4	O 39.8	23 50	+ 5.6	66	3.2	36	3.2	O 49.2
12 8	− 1.8	893	1.0	871	2.6	O 47.9							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 1	−1.6	121	2.7	66	3.2	O 50.4	12 6	−6.6	718	3.4	688	2.7	W 45.6
0 17	−2.8	134	3.0	101	1.0	O 39.6	12 24	+2.0	746	4.8	712	2.4	W 53.5
0 28	−4.6	131	2.1	129	2.9	O 35.1	12 39	−3.6	881	1.0	912	2.9	O 37.0
0 47	−3.2	91	3.2	133	2.0	O 54.4	12 51	−2.6	857	2.4	910	3.7	O 45.2
1 5	−2.2	133	2.0	91	3.2	O 55.1	13 8	−2.0	910	3.7	857	2.4	O 45.9
1 11	+2.8	16	4.2	1568	4.1	W 32.7	13 33	−2.4	987	2.2	959	3.4	O 44.0
1 32	+3.0	1568	4.1	16	4.2	W 31.6	13 51	−1.2	821	2.8	786	2.8	W 65.6
2 8	−4.8	58	4.1	94	3.6	W 63.1	14 3	−1.4	998	3.4	948	2.7	O 55.2
2 9	−1.2	94	3.6	39	2.2	W 63.9	14 22	+1.0	882	3.4	852	3.3	W 72.2
2 35	+2.8	101	1.0	71	2.1	W 39.8	14 34	−3.8	970	3.5	998	3.4	O 61.4
2 51	−1.8	39	2.2	94	3.6	W 56.5	14 54	+1.6	852	3.3	882	3.4	W 67.3
3 10	−3.0	309	2.7	291	3.2	O 41.6	15 9	−2.2	1084	3.2	1073	2.3	O 58.1
3 24	+4.8	129	2.9	131	2.1	W 34.6	15 25	+2.6	959	3.4	910	3.7	W 47.1
3 36	−2.2	243	4.1	288	1.0	O 62.5	15 39	+3.2	1073	2.3	1039	3.5	O 60.5
4 0	−1.8	382	1.0	368	2.4	O 58.2	15 52	−1.8	1118	1.7	1160	3.6	O 54.6
4 15	−0.6	199	4.3	142	5.8	W 56.8	16 8	−6.2	1081	3.0	1100	3.1	O 42.4
4 29	+2.0	411	2.9	362	3.0	O 57.0	16 27	−2.0	1073	2.3	1123	2.1	O 64.7
4 42	+1.8	460	1.9	412	2.9	O 52.0	16 45	+3.0	952	3.3	1004	2.9	W 34.5
4 56	+1.4	243	4.1	213	3.6	W 58.4	17 2	+0.8	1073	2.3	1003	3.5	W 64.5
5 8	−1.4	288	1.0	239	4.1	W 63.1	17 21	+1.2	1003	3.5	1073	2.3	W 62.5
5 26	+2.0	460	1.9	427	2.0	O 60.9	17 36	+6.8	1107	2.7	1100	3.1	W 43.4
5 41	+2.6	244	2.9	291	3.2	W 41.2	17 44	+1.4	1271	5.5	1226	3.0	O 62.0
6 0	−2.8	429	3.1	471	3.3	O 55.0	18 3	−2.2	1175	1.9	1226	3.0	O 64.3
6 19	+1.2	342	1.7	411	2.9	W 69.0	18 20	+1.6	1118	1.7	1084	3.2	W 59.5
6 39	−2.4	460	1.9	492	0.5	O 72.0	18 40	+2.0	1129	3.5	1069	3.3	W 33.2
6 44	+4.2	525	2.1	484	1.8	O 48.1	18 59	−2.0	1389	3.1	1324	1.9	O 40.2
7 4	+1.6	368	2.4	342	1.7	W 57.8	19 17	+3.8	1158	3.0	1160	3.6	W 62.0
7 22	+2.4	427	2.0	470	2.5	W 61.6	19 28	+2.0	1175	1.9	1160	3.6	W 59.8
7 40	+2.2	441	3.2	388	2.7	W 36.2	19 40	−3.4	1399	4.2	1396	4.9	O 52.7
7 58	+1.4	483	3.0	427	2.0	W 55.3	20 0	+1.0	1403	3.8	1344	3.5	O 66.0
8 17	+5.2	496	1.1	525	2.1	W 51.6	20 38	+1.4	1289	4.1	1226	3.0	W 55.2
8 37	+1.8	525	2.1	471	3.3	W 51.3	20 49	+4.4	1364	3.6	1325	2.3	W 40.2
8 52	−1.8	641	3.4	606	3.6	O 58.5	21 6	−1.2	1499	3.3	1434	3.0	O 60.2
9 7	+1.6	557	3.7	529	3.5	W 65.4	21 18	+3.6	1303	3.5	1283	2.8	W 31.0
9 24	+3.0	495	3.4	525	2.1	W 47.7	21 40	−4.8	1500	2.0	1523	2.4	O 49.7
9 43	+2.2	556	3.9	606	3.6	W 58.4	21 53	+1.6	1341	3.0	1297	3.6	W 47.9
10 3	−2.0	556	3.9	523	2.8	W 55.6	22 11	+3.8	1352	1.3	1400	4.2	W 32.2
10 21	+3.8	591	1.7	569	2.9	W 28.6	22 29	+2.6	1525	2.4	1581	4.4	O 65.1
10 30	+1.2	786	2.8	744	2.1	O 61.0	22 36	+1.6	39	2.2	10	2.7	O 58.9
10 51	−2.8	818	2.8	780	1.0	O 34.5	22 56	+1.0	1516	1.2	1456	3.6	W 69.0
11 0	+1.2	792	2.6	744	2.1	O 64.5	23 13	+1.4	1456	3.6	1516	1.2	W 67.8
11 20	+3.8	684	2.8	647	3.4	W 34.6	23 34	−2.0	66	3.2	121	2.7	O 47.4
11 28	−4.4	818	2.8	808	1.4	O 38.4	23 52	+3.0	91	3.2	36	3.2	O 49.9
11 45	+4.2	647	3.4	684	2.8	W 33.5							
11 54	−1.8	712	2.4	664	4.2	W 58.1							

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 9	+ 1.8	127	3.9	94	3.6	O 61.1
0 27	− 2.6	10	2.7	1581	4.4	W 66.0
0 38	− 2.0	178	3.6	144	3.5	O 43.0
0 54	− 2.0	133	2.0	91	3.2	O 54.3
1 4	+ 2.2	179	4.4	133	2.0	O 56.3
1 25	+ 2.4	16	4.2	1568	4.1	W 31.8
1 44	− 3.8	58	4.1	94	3.6	W 65.5
2 3	− 1.0	94	3.6	39	2.2	W 65.1
2 29	− 5.6	118	3.5	91	3.2	W 51.1
2 49	+ 2.4	101	1.0	71	2.1	W 38.8
3 8	+ 1.8	320	3.2	288	1.0	O 59.2
3 25	− 2.2	243	4.1	288	1.0	O 61.5
3 29	+ 2.4	144	3.5	118	3.5	W 43.9
3 51	− 1.8	382	1.0	368	2.4	O 56.2
3 59	− 1.4	199	4.3	146	5.4	W 59.2
4 18	+ 2.0	223	5.8	178	3.6	W 46.6
4 39	+ 2.4	451	1.5	412	2.9	O 52.1
4 51	+ 1.8	460	1.9	412	2.9	O 53.7
5 3	+ 1.6	243	4.1	213	3.6	W 56.9
5 29	− 4.8	416	1.0	440	3.4	O 44.5
5 48	+ 1.4	523	2.8	471	3.3	O 54.0
6 8	− 2.0	471	3.3	429	3.1	O 55.2
6 27	− 2.2	460	1.9	492	0.5	O 69.8
6 44	+ 1.4	411	2.9	382	1.0	W 67.7
6 53	− 3.8	495	3.4	483	3.0	O 55.0
7 12	+ 1.6	368	2.4	342	1.7	W 56.1
7 23	+ 2.8	429	3.1	412	2.9	W 53.8
7 34	+ 2.4	427	2.0	470	2.5	W 60.6
7 53	+ 1.6	470	2.5	433	3.4	W 60.2
8 8	− 3.0	595	3.2	560	2.0	O 43.8
8 28	+ 1.6	427	2.0	483	3.0	W 51.9
8 46	+ 1.6	525	2.1	471	3.3	W 50.5
9 3	+ 2.4	525	2.1	495	3.4	W 49.7
9 15	+ 1.6	557	3.7	529	3.5	W 64.3
9 32	− 5.8	648	3.4	645	3.9	O 56.2
9 37	+ 1.4	606	3.6	556	3.9	W 58.3
9 56	+ 2.6	762	3.0	744	2.1	O 56.0
10 8	+ 3.0	636	3.7	595	3.2	W 44.3
10 26	+ 3.8	595	3.2	636	3.7	W 43.6
10 44	+ 6.0	645	3.9	648	3.4	W 56.0
11 6	+ 1.4	792	2.6	744	2.1	O 65.4
11 15	+ 1.6	838	3.1	795	5.1	O 58.1
11 33	− 3.4	800	2.3	830	4.2	O 47.9
11 45	− 1.8	712	2.4	664	4.2	W 59.2
12 2	+ 2.0	688	2.7	648	3.4	W 46.4

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
12 15	− 4.4	818	2.8	789	1.6	O 42.0
12 34	+ 1.8	746	4.8	712	2.4	W 52.3
12 51	+ 3.6	721	4.1	718	3.4	W 40.8
13 8	+ 1.4	953	3.4	893	1.0	O 58.8
13 26	− 1.4	882	3.4	932	3.7	O 70.2
13 45	− 1.0	821	2.8	786	2.8	W 66.7
13 56	− 1.4	998	3.4	948	2.7	O 54.2
14 20	− 5.6	818	2.8	760	2.7	W 38.5
14 38	+ 6.6	1073	2.3	1056	2.6	O 51.2
14 58	− 2.0	1084	3.2	1073	2.3	O 56.0
15 16	− 2.6	1068	1.9	1131	3.6	O 28.0
15 35	− 2.4	1131	3.6	1068	1.9	O 29.0
15 51	+ 2.4	893	1.0	948	2.7	W 52.7
16 10	− 1.8	1193	1.0	1129	3.5	O 32.2
16 20	− 1.4	1160	3.6	1118	1.7	O 58.6
16 39	+ 2.4	1004	2.9	952	3.3	W 34.5
16 46	− 2.6	953	3.4	998	3.4	W 59.5
17 6	+ 1.0	1073	2.3	1003	3.5	W 63.8
17 27	+ 1.0	1003	3.5	1073	2.3	W 61.5
17 36	+ 3.4	1121	1.9	1098	3.0	W 55.6
17 56	+ 3.2	1123	2.1	1158	3.0	W 68.0
18 10	+ 4.8	1107	2.7	1100	3.1	W 41.8
18 28	+ 1.2	1118	1.7	1084	3.2	W 58.3
18 37	+ 1.8	1123	2.1	1175	1.9	W 63.1
18 50	+ 2.0	1129	3.5	1069	3.3	W 32.4
18 58	+ 1.4	1158	3.0	1134	2.8	W 64.2
19 14	− 1.4	1226	3.0	1182	2.8	W 67.5
19 36	+ 3.4	1158	3.0	1160	3.6	W 58.6
19 43	− 2.8	1182	2.8	1226	3.0	W 64.3
20 5	+ 1.2	1403	3.8	1344	3.5	O 66.8
20 26	− 4.2	1341	3.0	1389	3.1	O 50.9
20 45	+ 1.2	1289	4.1	1226	3.0	W 54.1
21 0	− 1.2	1499	3.3	1434	3.0	O 59.3
21 16	− 3.8	1500	2.0	1523	2.4	O 47.5
21 35	+ 4.6	1325	2.3	1364	3.6	W 38.5
21 55	− 3.2	1520	3.5	1467	2.8	O 37.8
22 10	+ 1.4	1396	4.9	1344	3.5	W 55.2
22 30	+ 3.2	1352	1.3	1400	4.2	W 30.8
22 44	+ 1.6	39	2.2	10	2.7	O 60.4
23 1	+ 1.0	1516	1.2	1456	3.6	W 68.5
23 20	+ 1.4	1456	3.6	1516	1.2	W 66.8
23 36	+ 5.2	36	3.2	91	3.2	O 48.8
23 53	− 1.6	121	2.7	66	3.2	O 49.4

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für + 0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für + 0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 2	+ 4.4	36	3.2	91	3.2	O 50.8	12 26	− 2.2	857	2.4	910	3.7	O 42.7
0 18	+ 1.8	127	3.9	94	3.6	O 62.8	12 35	− 2.8	912	2.9	881	1.0	O 36.4
0 24	+ 4.8	133	2.0	179	4.4	O 50.8	12 48	− 2.0	910	3.7	857	2.4	O 44.4
0 44	− 2.2	133	2.0	91	3.2	O 53.6	13 5	− 3.4	839	2.9	872	2.8	O 61.6
1 4	+ 2.4	3	2.1	66	3.2	W 50.8	13 25	+ 6.0	959	3.4	912	2.9	O 41.6
1 14	+ 5.6	36	3.2	66	3.2	W 50.5	13 40	− 0.8	932	3.7	882	3.4	O 71.5
1 43	+ 4.0	71	2.1	124	3.6	W 46.0	14 0	− 3.0	970	3.5	998	3.4	O 57.0
1 58	− 1.0	94	3.6	39	2.2	W 65.8	14 13	+ 3.8	883	2.1	872	2.8	W 61.9
2 34	− 1.8	39	2.2	94	3.6	W 60.1	14 32	+ 0.8	882	3.4	852	3.3	W 70.5
3 1	+ 2.4	101	1.0	71	2.1	W 37.6	14 50	+ 2.8	998	3.4	1051	1.2	O 63.0
3 17	+ 2.0	320	3.2	288	1.0	O 61.0	15 9	+ 1.6	852	3.3	882	3.4	W 64.0
3 31	− 1.6	288	1.0	243	4.1	O 61.5	15 27	− 7.0	1004	2.9	1036	3.6	O 34.8
3 41	+ 2.4	144	3.5	118	3.5	W 42.6	15 42	− 4.4	966	3.2	920	2.4	W 47.8
3 52	− 1.4	199	4.3	146	5.4	W 60.1	16 1	− 1.4	998	3.4	953	3.4	W 65.9
4 3	+ 3.6	362	3.0	411	2.9	O 53.7	16 18	+ 2.8	910	3.7	959	3.4	W 43.1
4 8	− 0.6	199	4.3	142	5.8	W 58.6	16 33	− 2.6	953	3.4	998	3.4	W 61.9
4 28	+ 1.8	223	5.8	178	3.6	W 45.6	16 51	+ 2.4	1004	2.9	952	3.3	W 33.6
4 48	+ 2.0	411	2.9	362	3.0	O 59.6	17 11	+ 0.8	1073	2.3	1003	3.5	W 63.1
5 5	− 4.2	416	1.0	440	3.4	O 42.6	17 32	+ 1.2	1003	3.5	1073	2.3	W 60.8
5 25	− 2.2	379	2.9	427	2.0	O 61.5	17 51	− 1.2	1286	1.0	1228	4.1	O 56.8
5 40	+ 2.0	291	3.2	244	2.9	W 40.9	17 59	− 1.4	1226	3.0	1175	1.9	O 63.4
5 59	− 4.4	411	2.9	433	3.4	O 67.5	18 16	− 0.8	1251	3.3	1199	3.3	O 70.7
6 17	+ 1.0	411	2.9	342	1.7	W 68.2	18 34	+ 1.4	1118	1.7	1084	3.2	W 57.4
6 37	− 3.0	412	2.9	379	2.9	W 59.1	18 46	+ 1.8	1123	2.1	1175	1.9	W 62.2
6 51	+ 1.4	411	2.9	382	1.0	W 66.3	19 5	+ 1.6	1158	3.0	1134	2.8	W 62.8
7 5	− 2.0	595	3.2	535	1.7	O 37.4	19 18	− 6.4	1325	2.3	1324	1.9	O 40.0
7 25	+ 1.8	470	2.5	427	2.0	W 61.0	19 35	− 2.6	1125	3.5	1160	3.6	W 59.1
7 37	+ 2.6	429	3.1	412	2.9	W 52.3	19 50	− 4.0	1226	3.0	1211	2.1	W 65.1
7 54	+ 2.8	471	3.3	519	2.2	W 58.3	20 5	− 3.8	1341	3.0	1389	3.1	O 50.0
8 12	+ 1.2	483	3.0	427	2.0	W 53.5	20 19	− 2.8	1389	3.1	1341	3.0	O 50.4
8 30	− 4.4	495	3.4	470	2.5	W 55.2	20 36	− 6.6	1400	4.2	1431	4.3	O 31.6
8 48	+ 2.8	483	3.0	471	3.3	W 50.4	20 56	− 0.6	1297	3.6	1227	3.2	W 58.8
9 5	+ 3.8	496	1.1	525	2.1	W 48.4	21 12	+ 6.4	1324	1.9	1325	2.3	W 39.9
9 23	+ 1.6	557	3.7	529	3.5	W 63.1	21 30	+ 3.4	1364	3.6	1325	2.3	W 38.5
9 34	− 3.8	708	3.0	684	2.8	O 33.2	21 50	− 2.8	1501	2.9	1451	1.8	O 50.6
9 48	+ 5.0	576	3.3	627	3.0	W 33.4	21 58	+ 4.0	1325	2.3	1364	3.6	W 37.0
10 5	+ 2.0	556	3.9	606	3.6	W 56.0	22 17	+ 1.4	1396	4.9	1344	3.5	W 54.0
10 23	+ 2.6	636	3.7	595	3.2	W 43.4	22 35	− 1.2	1399	4.2	1348	5.5	W 56.7
10 41	+ 1.2	786	2.8	744	2.1	O 63.2	22 52	+ 1.6	39	2.2	10	2.7	O 62.0
10 45	+ 3.4	595	3.2	636	3.7	W 42.2	23 6	+ 1.0	1516	1.2	1456	3.6	W 67.8
11 13	+ 1.2	792	2.6	744	2.1	O 66.3	23 15	+ 6.6	21	2.3	3	2.1	O 52.2
11 27	− 5.0	789	1.6	818	2.8	O 40.1	23 25	+ 2.2	1516	1.2	1499	3.3	W 66.5
11 46	− 2.6	830	4.2	800	2.3	O 48.6	23 45	+ 5.2	1500	2.0	1501	2.9	W 48.1
11 55	− 3.0	684	2.8	647	3.4	W 32.5							
12 14	+ 5.6	708	3.0	733	3.3	W 34.7							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für + 0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 4	− 2.6	91	3.2	133	2.0	O 49.7
0 26	− 3.0	66	3.2	118	3.5	O 49.5
0 42	− 4.0	134	3.0	124	3.6	O 43.7
1 2	+ 2.0	66	3.2	3	2.1	W 50.3
1 17	− 4.8	131	2.1	101	1.0	O 39.8
1 29	+ 4.4	5	3.8	3	2.1	W 47.1
1 42	+ 4.4	36	3.2	66	3.2	W 48.8
1 53	− 1.0	94	3.6	39	2.2	W 66.5
2 7	− 5.0	190	3.0	148	4.2	O 28.4
2 25	− 1.6	39	2.2	94	3.6	W 62.0
2 46	− 2.8	187	2.9	238	3.0	O 56.6
3 3	− 2.0	243	4.1	288	1.0	O 59.2
3 23	− 1.6	288	1.0	243	4.1	O 60.8
3 36	+ 4.0	178	3.6	210	4.2	W 53.5
3 45	− 1.4	199	4.3	146	5.4	W 61.2
4 5	− 0.6	199	4.3	142	5.8	W 59.4
4 21	+ 3.4	362	3.0	411	2.9	O 56.4
4 29	− 4.4	244	2.9	210	4.2	W 49.8
4 49	− 1.2	288	1.0	239	4.1	W 65.8
5 8	+ 1.8	460	1.9	412	2.9	O 56.5
5 19	3.0	440	3.4	416	1.0	O 43.4
5 37	− 3.6	411	2.9	433	3.4	O 65.5
5 56	+ 1.8	460	1.9	427	2.0	O 65.1
6 16	− 3.2	495	3.4	483	3.0	O 52.0
6 28	− 2.0	412	2.9	368	2.4	W 59.9
6 37	+ 1.0	342	1.7	411	2.9	W 66.2
6 56	− 4.0	368	2.4	412	2.9	W 57.6
7 16	− 1.8	556	3.9	519	2.2	O 56.8
7 34	+ 1.6	470	2.5	427	2.0	W 60.0
7 50	+ 2.6	429	3.1	412	2.9	W 50.6
8 9	+ 1.4	470	2.5	433	3.4	W 58.2
8 29	− 7.0	606	3.6	623	3.0	O 54.9
8 49	+ 2.8	525	2.1	496	1.1	W 49.4
9 9	− 4.0	623	3.0	606	3.6	O 57.2
9 27	− 3.0	606	3.6	648	3.4	O 57.2
9 35	− 1.8	556	3.9	523	2.8	W 60.6
9 52	+ 1.6	606	3.6	556	3.9	W 56.8
9 58	+ 3.4	627	3.0	576	3.3	W 32.8
10 15	+ 2.0	556	3.9	606	3.6	W 54.9
10 24	+ 2.4	645	3.9	623	3.0	W 55.6
10 41	− 6.0	688	2.7	718	3.4	O 48.5
10 51	+ 2.2	744	2.1	792	2.6	O 63.6
11 2	− 4.2	789	1.6	818	2.8	O 38.2
11 19	+ 1.2	792	2.6	744	2.1	O 67.0
11 39	+ 4.2	645	3.9	648	3.4	W 50.6
11 56	− 3.0	664	4.2	712	2.4	W 58.3
12 15	− 2.2	857	2.4	910	3.7	O 41.8
12 33	− 6.2	883	2.1	893	1.0	O 55.2
12 53	+ 1.8	746	4.8	712	2.4	W 50.1
13 12	− 1.2	882	3.4	932	3.7	O 67.8
13 32	− 3.8	966	3.2	959	3.4	O 42.4
13 45	− 2.8	970	3.5	998	3.4	O 54.9
14 6	+ 2.2	871	2.6	830	4.2	W 50.6
14 26	− 2.0	998	3.4	970	3.5	O 60.0
14 36	+ 1.0	882	3.4	852	3.3	W 69.5
14 55	− 1.6	1039	3.5	984	2.9	O 56.0
15 15	− 4.4	1036	3.6	1004	2.9	O 34.2
15 17	+ 1.4	852	3.3	882	3.4	W 62.6
15 37	+ 4.4	1073	2.3	1056	2.6	O 59.3
15 54	+ 6.4	1118	1.7	1098	3.0	O 53.8
16 14	+ 2.0	893	1.0	948	2.7	W 49.3
16 31	+ 2.6	1211	2.1	1178	3.9	O 51.9
17 3	+ 2.2	1004	2.9	952	3.3	W 32.7
17 19	+ 3.4	1107	2.7	1069	3.3	W 42.0
17 38	+ 1.2	1003	3.5	1073	2.3	W 59.7
17 52	1.4	1226	3.0	1175	1.9	O 62.6
18 9	+ 3.0	1121	1.9	1098	3.0	W 53.7
18 28	+ 2.8	1123	2.1	1158	3.0	W 65.4
18 46	− 4.8	1325	2.3	1324	1.9	O 38.0
19 4	+ 1.0	1321	3.1	1282	2.7	O 70.6
19 22	− 2.4	1125	3.5	1160	3.6	W 62.0
19 42	+ 3.4	1434	3.0	1389	3.1	O 48.4
19 57	+ 1.8	1344	3.5	1403	3.8	O 66.2
20 17	+ 1.0	1403	3.8	1344	3.5	O 68.3
20 29	− 4.6	1431	4.3	1400	4.2	O 31.2
20 48	− 1.0	1499	3.3	1434	3.0	O 57.8
21 5	+ 2.2	1514	3.2	1499	3.3	O 62.9
21 24	− 2.8	1520	3.5	1467	2.8	O 36.2
21 44	+ 4.8	1324	1.9	1325	2.3	W 37.8
22 21	− 6.2	1539	3.9	1568	4.1	O 37.9
22 41	− 3.8	1525	2.4	1516	1.2	O 67.2
23 0	+ 1.4	39	2.2	10	2.7	O 63.4
23 11	+ 1.0	1516	1.2	1456	3.6	W 66.8
23 27	+ 4.8	1523	2.4	1563	4.9	W 54.2
23 47	− 2.0	121	2.7	91	3.2	O 49.0

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 11	−2.8	66	3.2	118	3.5	O 48.2	13 6	−1.4	882	3.4	932	3.7	O 66.6
0 31	−2.0	118	3.5	66	3.2	O 49.5	13 19	−3.8	871	2.6	910	3.7	O 49.8
0 49	−3.0	58	4.1	94	3.6	O 66.8	13 36	−1.4	998	3.4	948	2.7	O 51.2
1 8	+3.6	133	2.0	179	4.4	O 57.1	13 45	−7.4	760	2.7	818	2.8	W 42.0
1 28	+2.2	3	2.1	66	3.2	W 48.9	14 7	−2.2	795	5.1	762	3.0	W 54.9
1 48	−1.0	94	3.6	39	2.2	W 67.5	14 26	−4.4	1004	2.9	1036	3.6	O 32.0
2 4	+4.0	36	3.2	66	3.2	W 47.0	14 41	+1.0	882	3.4	852	3.3	W 68.7
2 23	−4.0	71	2.1	21	2.3	W 44.0	15 0	−0.8	872	2.8	827	4.3	W 58.9
2 32	−2.6	187	2.9	238	3.0	O 55.8	15 16	+2.4	998	3.4	1051	1.2	O 66.3
2 53	−2.0	243	4.1	288	1.0	O 58.1	15 33	+4.2	920	2.4	910	3.7	W 48.0
3 8	+2.2	133	2.0	187	2.9	W 55.8	15 51	+1.6	948	2.7	893	1.0	W 51.9
3 18	+1.6	320	3.2	281	3.5	O 60.6	16 8	+1.4	1084	3.2	1125	3.5	O 70.2
3 36	+1.8	320	3.2	288	1.0	O 64.0	16 16	+1.8	1158	3.0	1098	3.0	O 56.1
3 56	+3.8	178	3.6	210	4.2	W 52.0	16 33	+1.0	1125	3.5	1084	3.2	O 73.5
4 13	−2.2	146	5.4	199	4.3	W 57.6	16 46	+4.6	1039	3.5	1073	2.3	W 62.8
4 33	+3.4	291	3.2	248	3.0	W 41.8	17 2	−4.4	1137	3.3	1121	1.9	O 53.8
4 47	+4.4	248	3.0	291	3.2	W 41.6	17 22	−2.0	1175	1.9	1226	3.0	O 59.6
5 7	+1.6	411	2.9	362	3.0	O 61.8	17 41	−1.2	1199	3.3	1251	3.3	O 65.4
5 23	+4.2	427	2.0	460	1.9	O 60.9	17 56	+4.0	1069	3.3	1107	2.7	W 40.8
5 38	−1.8	471	3.3	429	3.1	O 52.3	18 13	+1.8	1158	3.0	1123	2.1	W 66.5
5 53	−2.0	433	3.4	411	2.9	O 66.7	18 26	+1.0	1182	2.8	1134	2.8	W 71.2
6 10	+1.4	523	2.8	471	3.3	O 58.0	18 44	+1.2	1134	2.8	1182	2.8	W 69.7
6 26	+0.8	411	2.9	342	1.7	W 67.0	19 4	+1.6	1123	2.1	1175	1.9	W 59.6
6 45	+5.2	519	2.2	496	1.1	O 53.2	19 20	+1.2	1158	3.0	1134	2.8	W 59.9
7 5	+1.4	411	2.9	382	1.0	W 64.5	19 29	−3.2	1341	3.0	1389	3.1	O 47.3
7 25	−2.6	595	3.2	560	2.0	O 40.8	19 41	−1.2	1178	3.9	1125	3.5	W 55.1
7 45	+6.2	470	2.5	471	3.3	W 59.3	19 59	+3.2	1434	3.0	1389	3.1	O 50.5
8 5	+4.2	484	1.8	525	2.1	W 49.9	20 6	+1.6	1344	3.5	1403	3.8	O 67.7
8 25	+1.2	483	3.0	427	2.0	W 51.5	20 43	−1.2	1499	3.3	1434	3.0	O 56.7
8 42	−2.0	495	3.4	451	1.5	W 55.0	20 58	−3.2	1451	1.8	1501	2.9	O 47.2
8 49	−3.6	623	3.0	606	3.6	O 56.2	21 16	+2.2	1514	3.2	1499	3.3	O 65.2
9 9	+1.6	525	2.1	471	3.3	W 47.8	21 23	−2.4	1501	2.9	1451	1.8	O 49.0
9 26	−1.8	556	3.9	523	2.8	W 62.0	21 50	−5.2	1539	3.9	1568	4.1	O 35.8
9 38	+1.4	557	3.7	529	3.5	W 60.8	22 3	+3.0	1364	3.6	1325	2.3	W 36.2
10 0	+1.6	606	3.6	556	3.9	W 56.0	22 22	−3.6	1525	2.4	1516	1.2	O 66.3
10 15	+3.2	627	3.0	576	3.3	W 32.2	22 40	+5.4	1457	4.3	1500	2.0	W 49.4
10 34	+2.4	762	3.0	744	2.1	O 63.2	23 7	+1.4	39	2.2	10	2.7	O 64.8
10 49	+2.6	636	3.7	595	3.2	W 41.6	23 27	−4.6	1563	4.9	3	2.1	O 53.8
11 6	+3.4	623	3.0	645	3.9	W 52.4	23 47	+2.0	1516	1.2	1499	3.3	W 63.5
11 25	+1.2	792	2.6	744	2.1	O 67.8	23 51	−2.4	91	3.2	133	2.0	O 48.0
11 41	−2.8	664	4.2	712	2.4	W 59.9							
12 6	+2.4	760	2.7	718	3.4	W 46.9							
12 19	+3.2	718	3.4	760	2.7	W 46.5							
12 34	+3.6	733	3.3	708	3.0	W 33.2							
12 53	+2.4	893	1.0	953	3.4	O 57.0							

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 14	− 2.0	133	2.0	91	3.2	O 50.4	12 0	− 1.4	744	2.1	710	4.3	W 68.2
0 34	+ 3.8	21	2.3	3	2.1	W 53.6	12 19	− 2.8	839	2.9	872	2.8	O 57.8
0 48	+ 2.0	10	2.7	58	4.1	W 66.5	12 39	+ 5.4	740	3.8	780	1.0	W 33.8
1 0	− 3.4	118	3.5	91	3.2	O 52.5	12 58	− 3.4	893	1.0	883	2.1	O 58.3
1 17	+ 2.4	222	4.3	199	4.3	O 54.5	13 5	+ 2.4	893	1.0	953	3.4	O 59.1
1 26	+ 3.4	133	2.0	179	4.4	O 59.2	13 23	− 1.2	821	2.8	786	2.8	W 70.8
1 43	− 1.0	94	3.6	39	2.2	W 68.3	13 37	+ 1.4	953	3.4	893	1.0	O 63.0
2 3	− 3.6	71	2.1	21	2.3	W 46.1	13 56	− 2.4	795	5.1	762	3.0	W 56.9
2 19	− 2.4	187	2.9	238	3.0	O 54.9	14 14	− 2.0	984	2.9	1039	3.5	O 51.6
2 37	− 2.0	238	3.0	187	2.9	O 55.8	14 34	− 3.6	1036	3.6	1004	2.9	O 32.2
2 43	− 2.0	243	4.1	288	1.0	O 56.7	14 46	+ 0.8	882	3.4	852	3.3	W 67.7
3 3	+ 1.6	187	2.9	133	2.0	W 55.8	15 5	+ 3.0	883	2.1	872	2.8	W 57.0
3 19	+ 2.2	133	2.0	187	2.9	W 55.0	15 10	+ 1.0	1092	2.4	1039	3.5	O 60.4
3 26	+ 1.6	320	3.2	281	3.5	O 61.9	15 28	+ 2.4	998	3.4	1051	1.2	O 67.3
3 45	+ 1.6	320	3.2	288	1.0	O 65.4	15 44	+ 3.2	1098	3.0	1158	3.0	O 51.8
4 2	− 2.4	146	5.4	199	4.3	W 59.4	15 59	+ 1.6	948	2.7	893	1.0	W 50.8
4 15	− 4.4	319	3.3	291	3.2	O 41.4	16 15	+ 1.6	1084	3.2	1125	3.5	O 71.8
4 41	+ 2.8	412	2.9	460	1.9	O 52.5	16 29	+ 3.0	1175	1.9	1137	3.3	O 52.5
4 53	+ 3.0	362	3.0	411	2.9	O 60.5	16 47	+ 2.4	1073	2.3	1039	3.5	W 62.4
5 9	+ 4.0	248	3.0	291	3.2	W 40.4	16 57	+ 2.4	1211	2.1	1178	3.9	O 56.6
5 29	− 1.8	471	3.3	429	3.1	O 51.3	17 12	− 1.8	1175	1.9	1226	3.0	O 58.3
5 48	− 7.6	411	2.9	427	2.0	O 65.5	17 23	+ 1.0	1073	2.3	1003	3.5	W 60.9
6 6	− 5.0	471	3.3	470	2.5	O 56.7	17 38	− 1.2	1226	3.0	1175	1.9	O 61.1
6 25	− 1.2	492	0.5	460	1.9	O 69.0	17 57	− 2.6	1039	3.5	1012	2.3	W 54.6
6 43	− 4.0	496	1.1	483	3.0	O 52.6	18 17	− 1.8	1098	3.0	1051	1.2	W 54.8
7 3	− 2.2	362	3.0	320	3.2	W 54.6	18 31	+ 0.8	1182	2.8	1134	2.8	W 70.8
7 22	+ 4.4	388	2.7	416	1.0	W 41.6	18 51	+ 1.6	1160	3.6	1211	2.1	W 70.0
7 38	− 2.6	585	2.1	623	3.0	O 48.6	19 4	+ 2.0	1160	3.6	1199	3.3	W 67.8
7 49	+ 1.6	470	2.5	427	2.0	W 58.4	19 14	+ 1.0	1321	3.1	1282	2.7	O 72.5
8 4	+ 2.6	431	3.1	483	3.0	W 51.9	19 26	+ 1.4	1158	3.0	1134	2.8	W 58.7
8 19	+ 3.2	519	2.2	495	3.4	W 56.5	19 41	− 2.4	1389	3.1	1341	3.0	O 48.0
8 33	+ 2.4	471	3.3	519	2.2	W 55.5	19 56	− 4.4	1357	2.4	1341	3.0	O 48.4
8 50	− 4.2	471	3.3	451	1.5	W 53.0	20 15	+ 3.0	1434	3.0	1389	3.1	O 52.2
9 5	+ 3.6	585	2.1	558	4.1	W 53.2	20 37	− 1.2	1499	3.3	1434	3.0	O 55.5
9 17	+ 1.4	525	2.1	471	3.3	W 46.8	20 57	− 2.6	1520	3.5	1467	2.8	O 34.4
9 26	+ 6.0	558	4.1	585	2.1	W 52.9	21 11	− 2.4	1501	2.9	1451	1.8	O 48.0
9 45	+ 1.4	557	3.7	529	3.5	W 59.7	21 27	+ 2.2	1514	3.2	1499	3.3	O 67.5
9 47	− 4.4	688	2.7	718	3.4	O 46.0	22 1	− 4.0	1568	4.1	1539	3.9	O 36.4
10 8	+ 1.4	606	3.6	556	3.9	W 55.2	22 16	− 1.4	1399	4.2	1348	5.5	W 60.5
10 20	+ 6.2	641	3.4	664	4.2	W 65.9	22 37	+ 1.4	1396	4.9	1344	3.5	W 50.7
10 37	− 6.2	740	3.8	733	3.3	O 33.4	22 57	− 4.0	5	3.8	36	3.2	O 47.6
10 53	+ 3.4	576	3.3	627	3.0	W 30.2	23 14	+ 1.4	39	2.2	10	2.7	O 66.0
11 12	+ 2.0	744	2.1	792	2.6	O 66.8	23 27	− 2.8	36	3.2	5	3.8	O 49.8
11 27	− 2.8	664	4.2	712	2.4	W 61.5	23 47	+ 1.4	1456	3.6	1516	1.2	W 62.0
11 41	− 2.6	648	3.4	622	5.0	W 52.7	23 57	+ 2.0	1516	1.2	1499	3.3	W 62.0

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 4	− 1.8	133	2.0	91	3.2	O 49.2
0 20	− 2.8	58	4.1	94	3.6	O 64.8
0 40	− 1.8	94	3.6	58	4.1	O 66.0
0 58	+ 2.0	10	2.7	58	4.1	W 65.9
1 17	+ 3.2	36	3.2	91	3.2	W 52.1
1 30	+ 1.8	66	3.2	3	2.1	W 48.3
1 50	+ 2.2	3	2.1	66	3.2	W 47.0
2 7	− 2.4	187	2.9	238	3.0	O 53.8
2 27	− 1.8	238	3.0	187	2.9	O 55.0
2 44	+ 3.0	281	3.5	320	3.2	O 55.1
3 1	− 1.4	288	1.0	243	4.1	O 58.5
3 11	+ 1.6	187	2.9	133	2.0	W 55.2
3 30	+ 2.2	133	2.0	187	2.9	W 53.9
3 34	+ 1.6	320	3.2	281	3.5	O 63.1
3 53	− 4.0	319	3.3	291	3.2	O 40.5
4 6	+ 4.0	379	2.9	343	1.8	O 52.1
4 24	+ 4.0	429	3.1	388	2.7	O 43.0
4 44	+ 4.4	412	2.9	451	1.5	O 53.5
4 55	+ 2.6	412	2.9	460	1.9	O 55.1
5 10	− 6.0	411	2.9	427	2.0	O 61.5
5 29	+ 3.8	248	3.0	291	3.2	W 39.0
5 47	+ 2.2	502	3.4	471	3.3	O 55.9
6 4	+ 3.8	427	2.0	460	1.9	O 66.2
6 24	+ 1.4	523	2.8	471	3.3	O 60.0
6 34	+ 1.0	411	2.9	342	1.7	W 65.6
6 54	+ 1.0	342	1.7	411	2.9	W 63.4
7 13	+ 3.8	433	3.4	460	1.9	W 69.2
7 32	+ 2.4	451	1.5	433	3.4	W 65.5
7 46	+ 3.8	645	3.9	607	4.6	O 42.0
7 59	− 2.0	623	3.0	585	2.1	O 50.8
8 17	+ 2.4	431	3.1	483	3.0	W 50.5
8 35	+ 2.8	519	2.2	495	3.4	W 55.4
8 46	+ 3.6	484	1.8	525	2.1	W 47.6
9 6	+ 2.2	495	3.4	460	1.9	W 52.9
9 25	− 4.0	688	2.7	718	3.4	O 44.0
9 28	+ 2.4	525	2.1	496	1.1	W 45.4
9 52	+ 1.6	557	3.7	529	3.5	W 58.6
10 6	− 5.2	740	3.8	733	3.3	O 31.8
10 24	+ 1.8	744	2.1	786	2.8	O 61.0
10 44	+ 1.8	556	3.9	606	3.6	W 50.6
11 3	+ 1.0	786	2.8	744	2.1	O 67.5
11 22	+ 1.8	744	2.1	792	2.6	O 68.3
11 53	− 1.4	744	2.1	710	4.3	W 69.0
12 10	− 1.8	910	3.7	857	2.4	O 40.6
12 30	+ 2.2	760	2.7	718	3.4	W 45.4

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
12 50	+ 2.8	718	3.4	760	2.7	W 44.3
13 8	− 2.4	910	3.7	871	2.6	O 48.5
13 17	− 1.0	821	2.8	786	2.8	W 71.8
13 23	− 1.4	998	3.4	948	2.7	O 49.2
13 42	+ 3.0	857	2.4	818	2.8	W 43.0
13 59	+ 4.0	818	2.8	857	2.4	W 42.5
14 16	− 3.2	1036	3.6	1004	2.9	O 31.0
14 32	− 1.4	1039	3.5	984	2.9	O 53.6
14 50	+ 1.0	882	3.4	852	3.3	W 66.8
15 9	+ 2.6	830	4.2	871	2.6	W 45.0
15 23	− 4.6	912	2.9	871	2.6	W 43.5
15 33	− 1.6	1073	2.3	1123	2.1	O 57.5
15 47	− 1.2	1160	3.6	1118	1.7	O 52.9
16 7	+ 1.6	948	2.7	893	1.0	W 49.7
16 21	− 7.2	1129	3.5	1151	2.3	O 29.8
16 34	+ 1.8	1158	3.0	1098	3.0	O 58.4
16 52	− 5.8	1151	2.3	1129	3.5	O 31.0
17 3	− 1.8	1175	1.9	1226	3.0	O 56.7
17 28	+ 0.8	1073	2.3	1003	3.5	W 60.0
17 44	− 2.6	1039	3.5	1012	2.3	W 56.8
17 58	− 0.8	1251	3.3	1199	3.3	O 67.3
18 8	− 1.6	1098	3.0	1051	1.2	W 56.0
18 30	+ 1.6	1158	3.0	1123	2.1	W 64.7
18 46	− 6.4	1137	3.3	1118	1.7	W 53.2
18 59	+ 1.6	1160	3.6	1211	2.1	W 69.0
19 19	+ 1.0	1321	3.1	1282	2.7	O 73.0
19 37	+ 6.6	1389	3.1	1434	3.0	O 48.0
19 58	+ 4.8	1428	2.8	1424	2.3	O 62.2
20 10	− 3.4	1202	4.1	1182	2.8	W 55.7
20 30	+ 2.8	1434	3.0	1389	3.1	O 53.4
20 44	− 2.4	1520	3.5	1467	2.8	O 33.2
20 59	− 2.4	1501	2.9	1451	1.8	O 47.0
21 19	− 0.8	1227	3.2	1297	3.6	W 55.8
21 38	+ 2.2	1514	3.2	1499	3.3	O 69.7
21 48	− 3.0	1525	2.4	1516	1.2	O 62.8
22 12	− 2.0	1349	3.7	1321	3.1	W 57.6
22 37	− 3.6	5	3.8	36	3.2	O 45.4
22 42	− 3.6	1563	4.9	3	2.1	O 51.3
23 1	+ 3.0	1500	2.0	1457	4.3	W 48.2
23 21	+ 1.6	39	2.2	10	2.7	O 67.2
23 37	+ 2.2	1525	2.4	1581	4.4	W 67.3
23 54	+ 1.2	1456	3.6	1516	1.2	W 60.8

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 0	+1.2	1456	3.6	1516	1.2	W 59.3	12 7	−2.6	710	4.3	744	2.1	W 67.8
0 20	+3.8	94	3.6	127	3.9	O 63.8	12 26	−3.0	893	1.0	883	2.1	O 53.9
0 31	−1.6	94	3.6	58	4.1	O 65.2	12 43	+1.4	936	2.7	893	1.0	O 58.3
0 51	+3.2	1523	2.4	1563	4.9	W 47.4	12 56	−2.4	910	3.7	871	2.6	O 47.6
1 11	+3.4	21	2.3	3	2.1	W 51.1	13 12	−1.2	821	2.8	786	2.8	W 72.5
1 28	−3.2	71	2.1	21	2.3	W 49.0	13 30	+4.2	740	3.8	780	1.0	W 31.2
1 41	+2.4	222	4.3	199	4.3	O 58.9	13 47	−1.8	998	3.4	970	3.5	O 54.6
2 1	+2.2	3	2.1	66	3.2	W 45.8	13 57	+3.0	857	2.4	818	2.8	W 42.2
2 18	−1.8	238	3.0	187	2.9	O 54.2	14 12	−3.0	966	3.2	920	2.4	O 48.3
2 29	−6.0	91	3.2	134	3.0	W 49.0	14 25	−1.6	1039	3.5	984	2.9	O 52.6
2 40	+2.4	124	3.6	71	2.1	W 42.4	14 40	+1.6	1039	3.5	1092	2.4	O 55.4
3 0	+4.2	129	2.9	99	3.6	W 32.2	14 55	+0.8	882	3.4	852	3.3	W 65.8
3 19	+1.6	187	2.9	133	2.0	W 54.3	15 12	−3.4	838	3.1	872	2.8	W 56.5
3 33	−3.6	319	3.3	291	3.2	O 39.2	15 25	−1.8	1073	2.3	1123	2.1	O 55.9
3 53	+4.0	187	2.9	178	3.6	W 52.4	15 41	+3.8	1118	1.7	1088	3.6	O 50.2
4 10	+2.4	210	4.2	178	3.6	W 50.3	16 1	−3.4	1137	3.3	1121	1.9	O 48.6
4 26	+3.6	379	2.9	343	1.8	O 54.4	16 15	+1.6	948	2.7	893	1.0	W 48.6
4 45	−1.4	281	3.5	239	4.1	W 65.1	16 30	+1.6	1084	3.2	1125	3.5	O 73.8
5 1	−1.4	427	2.0	379	2.9	O 58.6	16 43	+1.8	1158	3.0	1098	3.0	O 59.4
5 21	+2.8	291	3.2	248	3.0	W 39.3	16 59	+2.6	1175	1.9	1137	3.3	O 55.9
5 41	+1.4	460	1.9	412	2.9	O 61.1	17 11	+2.2	1073	2.3	1039	3.5	W 60.8
5 58	+2.2	471	3.3	523	2.8	O 56.4	17 31	−2.4	1039	3.5	1012	2.3	W 59.3
6 13	−1.2	492	0.5	460	1.9	O 66.7	17 48	+3.6	1039	3.5	1073	2.3	W 56.6
6 31	+1.4	523	2.8	471	3.3	O 61.0	18 3	−8.6	1073	2.3	1098	3.0	W 56.0
6 42	−1.6	556	3.9	519	2.2	O 52.6	18 22	+2.8	1107	2.7	1069	3.3	W 38.4
7 1	−2.8	495	3.4	470	2.5	O 58.6	18 40	+0.8	1182	2.8	1134	2.8	W 69.5
7 18	−1.2	412	2.9	354	2.6	W 58.4	18 59	+1.2	1175	1.9	1123	2.1	W 59.7
7 32	+3.6	433	3.4	460	1.9	W 67.5	19 15	−7.4	1324	1.9	1352	1.3	O 37.0
7 49	−2.0	623	3.0	585	2.1	O 49.7	19 29	+1.6	1123	2.1	1175	1.9	W 55.5
8 3	−3.6	496	1.1	470	2.5	W 55.8	19 47	−5.4	1352	1.3	1324	1.9	O 38.4
8 13	−2.0	495	3.4	451	1.5	W 58.9	19 53	−3.2	1202	4.1	1182	2.8	W 58.8
8 32	+1.8	519	2.2	471	3.3	W 55.0	20 10	+5.4	1389	3.1	1434	3.0	O 51.8
8 52	−2.0	496	1.1	451	1.5	W 52.0	20 26	−1.2	1499	3.3	1434	3.0	O 53.9
9 12	+2.0	664	4.2	623	3.0	O 59.8	20 44	+2.8	1434	3.0	1389	3.1	O 54.6
9 29	−5.0	657	3.0	636	3.7	O 41.3	21 15	−1.0	1227	3.2	1297	3.6	W 56.6
9 42	−3.0	718	3.4	688	2.7	O 45.3	21 33	−3.0	1525	2.4	1516	1.2	O 60.4
10 0	+1.4	557	3.7	529	3.5	W 56.8	21 49	+2.0	1514	3.2	1499	3.3	O 71.2
10 3	−2.0	664	4.2	713	3.3	O 64.3	22 2	−1.8	1349	3.7	1321	3.1	W 59.7
10 21	+4.6	558	4.1	585	2.1	W 48.0	22 18	+5.4	1467	2.8	1431	4.3	W 34.8
10 37	+2.4	664	4.2	641	3.4	W 64.8	22 38	+7.2	1431	4.3	1467	2.8	W 34.4
11 8	+1.0	786	2.8	744	2.1	O 68.3	22 52	−2.6	3	2.1	1563	4.9	O 51.8
11 17	+4.4	641	3.4	664	4.2	W 60.5	23 6	+5.6	91	3.2	55	3.9	O 41.1
11 31	+2.0	744	2.1	792	2.6	O 69.0	23 21	−2.0	10	2.7	1581	4.4	O 66.7
11 39	−0.8	648	3.4	599	2.0	W 53.7	23 38	+2.6	107	3.4	94	3.6	O 58.2
11 52	2.6	839	2.9	872	2.8	O 53.8	23 55	−1.8	133	2.0	91	3.2	O 48.0

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 6	+ 1.4	1456	3.6	1516	1.2	W 58.2	12 17	− 1.8	872	2.8	839	2.9	O 56.9
0 26	+ 1.8	1516	1.2	1499	3.3	W 56.6	12 40	− 1.2	882	3.4	932	3.7	O 61.0
0 41	− 3.0	1525	2.4	1514	3.2	W 58.2	12 57	+ 4.2	882	3.4	872	2.8	O 63.8
0 59	+ 1.4	58	4.1	10	2.7	W 65.0	13 14	− 1.0	932	3.7	882	3.4	O 66.8
1 18	+ 1.8	10	2.7	58	4.1	W 63.6	13 33	− 2.2	786	2.8	821	2.8	W 70.2
1 31	+ 2.0	91	3.2	36	3.2	W 51.2	13 40	+ 2.2	893	1.0	953	3.4	O 64.2
1 48	+ 2.8	36	3.2	91	3.2	W 50.4	13 57	− 2.8	966	3.2	920	2.4	O 47.5
1 53	+ 2.4	222	4.3	199	4.3	O 61.1	14 17	− 1.4	1039	3.5	984	2.9	O 51.4
2 12	+ 2.0	3	2.1	66	3.2	W 44.4	14 38	+ 3.6	818	2.8	857	2.4	W 39.7
2 29	+ 2.4	66	3.2	36	3.2	W 43.7	14 58	+ 1.4	1092	2.4	1056	2.6	O 57.0
2 46	− 1.4	288	1.0	243	4.1	O 56.3	15 16	− 1.6	1073	2.3	1123	2.1	O 54.3
2 58	− 3.0	244	2.9	210	4.2	O 51.6	15 34	+ 3.2	959	3.4	912	2.9	W 42.8
3 15	− 3.4	319	3.3	291	3.2	O 38.0	15 47	− 1.2	1123	2.1	1073	2.3	O 58.9
3 29	− 6.2	368	2.4	343	1.8	O 48.6	16 0	+ 2.0	1182	2.8	1137	3.3	O 50.4
3 49	+ 1.6	320	3.2	281	3.5	O 65.2	16 11	+ 5.6	984	2.9	980	3.7	W 52.8
4 8	− 2.2	238	3.0	202	3.6	W 60.6	16 30	+ 2.8	1098	3.0	1158	3.0	O 58.5
4 24	− 2.0	379	2.9	427	2.0	O 53.7	16 45	− 1.8	1175	1.9	1226	3.0	O 53.6
4 44	+ 3.4	379	2.9	343	1.8	O 55.9	16 52	+ 1.8	1158	3.0	1098	3.0	O 59.9
5 2	− 1.6	471	3.3	429	3.1	O 47.6	17 12	+ 2.8	1175	1.9	1137	3.3	O 56.8
5 21	+ 2.4	412	2.9	460	1.9	O 59.2	17 32	− 2.0	1056	2.6	1012	2.3	W 58.8
5 35	+ 2.8	291	3.2	248	3.0	W 38.2	17 51	− 1.6	1098	3.0	1051	1.2	W 58.6
5 55	+ 2.0	451	1.5	412	2.9	O 62.4	18 11	− 2.8	1226	3.0	1211	2.1	O 67.5
6 14	+ 4.6	470	2.5	495	3.4	O 55.3	18 31	− 2.6	1051	1.2	1098	3.0	W 53.0
6 34	− 1.6	556	3.9	519	2.2	O 51.2	18 46	+ 1.6	1158	3.0	1123	2.1	W 62.4
6 52	+ 2.8	379	2.9	362	3.0	W 55.8	19 6	− 2.2	1389	3.1	1341	3.0	O 44.4
7 12	− 1.2	412	2.9	354	2.6	W 59.4	19 20	− 4.8	1352	1.3	1324	1.9	O 37.1
7 25	+ 3.6	431	3.1	470	2.5	W 57.6	19 37	+ 1.6	1123	2.1	1175	1.9	W 54.1
7 42	+ 2.8	416	1.0	388	2.7	W 39.5	20 20	− 1.0	1499	3.3	1434	3.0	O 52.6
7 56	+ 2.2	451	1.5	433	3.4	W 62.0	20 37	− 0.6	1297	3.6	1227	3.2	W 63.5
8 13	+ 3.6	519	2.2	496	1.1	W 55.2	20 43	+ 4.0	1428	2.8	1424	2.3	O 71.5
8 22	+ 7.6	483	3.0	484	1.8	W 50.0	21 5	+ 5.0	1283	2.8	1324	1.9	W 36.8
8 42	− 2.0	496	1.1	451	1.5	W 53.6	21 18	− 3.0	1525	2.4	1516	1.2	O 58.0
8 51	+ 2.4	525	2.1	484	1.8	W 47.0	21 53	− 2.0	1349	3.7	1321	3.1	W 61.6
9 8	+ 2.2	471	3.3	519	2.2	W 51.0	22 6	− 3.4	1563	4.9	3	2.1	O 47.6
9 27	− 2.8	718	3.4	688	2.7	O 43.9	22 29	− 3.4	1581	4.4	10	2.7	O 60.4
9 35	+ 9.6	569	2.9	594	2.2	W 35.7	22 45	− 2.6	36	3.2	5	3.8	O 46.0
9 55	+ 3.0	585	2.1	558	4.1	W 50.4	22 59	− 5.4	31	3.8	16	4.2	O 28.4
10 10	− 1.4	713	3.3	664	4.2	O 64.5	23 14	+ 6.0	1431	4.3	1467	2.8	W 32.6
10 30	+ 1.4	606	3.6	556	3.9	W 52.1	23 34	+ 4.8	91	3.2	55	3.9	O 44.3
10 49	+ 2.4	664	4.2	641	3.4	W 63.5	23 51	+ 2.6	107	3.4	94	3.6	O 60.8
11 13	+ 1.0	786	2.8	744	2.1	O 69.3							
11 23	+ 2.2	645	3.9	623	3.0	W 50.0							
11 39	+ 4.2	641	3.4	664	4.2	W 57.2							
11 54	− 2.4	710	4.3	744	2.1	W 69.3							
12 11	− 1.6	713	3.3	690	3.2	W 64.0							

Tafel III. Breite −4.5° bis −4.0°.

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 4	+2.4	107	3.4	94	3.6	O 63.5	12 8	−1.8	872	2.8	839	2.9	O 55.6
0 13	+1.2	1456	3.6	1516	1.2	W 56.6	12 21	−5.8	818	2.8	800	2.3	O 46.0
0 26	−2.8	1525	2.4	1514	3.2	W 61.4	12 34	−1.2	882	3.4	932	3.7	O 59.7
0 38	+2.4	1563	4.9	1523	2.4	W 48.6	12 57	+1.4	936	2.7	893	1.0	O 60.9
0 57	+3.4	94	3.6	127	3.9	O 69.3	13 11	−3.6	920	2.4	966	3.2	O 43.8
1 17	+1.4	222	4.3	178	3.6	O 53.4	13 22	−2.0	786	2.8	821	2.8	W 71.8
1 37	−1.4	39	2.2	94	3.6	W 70.0	13 43	−2.6	966	3.2	920	2.4	O 46.4
1 56	+1.6	66	3.2	3	2.1	W 45.8	13 51	+2.0	893	1.0	953	3.4	O 65.2
2 13	−4.2	210	4.2	244	2.9	O 48.8	14 10	−1.4	1039	3.5	984	2.9	O 50.4
2 39	−1.4	288	1.0	243	4.1	O 55.3	14 26	+2.8	857	2.4	818	2.8	W 40.4
2 43	−3.0	244	2.9	210	4.2	O 50.6	14 42	−0.6	872	2.8	827	4.3	W 63.2
3 3	+2.0	124	3.6	71	2.1	W 40.2	14 56	−2.2	1051	1.2	1084	3.2	O 59.7
3 27	+2.8	281	3.5	320	3.2	O 62.8	15 16	+5.8	1051	1.2	1039	3.5	O 62.9
3 38	+2.4	368	2.4	309	2.7	O 49.7	15 31	+1.0	1092	2.4	1039	3.5	O 64.3
3 57	+1.4	320	3.2	281	3.5	O 66.0	15 50	+3.0	959	3.4	912	2.9	W 41.8
4 1	+2.0	133	2.0	187	2.9	W 50.0	16 10	+2.0	1182	2.8	1137	3.3	O 51.9
4 18	+8.8	343	1.8	379	2.9	O 53.8	16 21	+3.8	912	2.9	959	3.4	W 39.6
4 34	−4.6	202	3.6	238	3.0	W 58.0	16 39	+5.0	984	2.9	980	3.7	W 50.5
4 53	−2.6	239	4.1	281	3.5	W 64.5	16 57	+5.2	1137	3.3	1175	1.9	O 55.8
5 6	−1.8	433	3.4	411	2.9	O 60.6	17 11	−1.2	1226	3.0	1175	1.9	O 57.1
5 20	+3.2	429	3.1	388	2.7	O 48.0	17 23	+3.0	1073	2.3	1056	2.6	W 59.1
5 33	+2.4	412	2.9	460	1.9	O 60.8	17 43	−1.6	1098	3.0	1051	1.2	W 59.5
5 51	−4.2	470	2.5	495	3.4	O 52.5	17 57	−2.6	1226	3.0	1211	2.1	O 65.8
6 3	−5.8	484	1.8	483	3.0	O 48.2	18 17	+4.0	1088	3.6	1121	1.9	W 49.8
6 22	−1.8	362	3.0	320	3.2	W 61.8	18 23	+4.6	1231	2.9	1226	3.0	O 70.5
6 33	−2.8	495	3.4	470	2.5	O 56.7	18 48	+1.0	1182	2.8	1134	2.8	W 68.0
6 52	+7.0	484	1.8	519	2.2	O 52.3	19 1	+1.0	1211	2.1	1160	3.6	W 68.0
7 8	+3.8	368	2.4	362	3.0	W 53.5	19 21	+1.6	1160	3.6	1211	2.1	W 65.9
7 22	+2.2	470	2.5	431	3.1	W 57.6	19 40	+1.8	1428	2.8	1399	4.2	O 57.8
7 36	−3.2	471	3.3	451	1.5	W 62.9	19 48	+2.8	1226	3.0	1265	4.6	W 68.3
7 54	−1.8	495	3.4	451	1.5	W 60.8	20 8	−2.8	1220	3.2	1175	1.9	W 49.2
8 7	+2.2	451	1.5	433	3.4	W 60.2	20 15	−1.2	1499	3.3	1434	3.0	O 51.6
8 22	−3.0	451	1.5	495	3.4	W 58.2	20 34	−0.6	1297	3.6	1227	3.2	W 64.3
8 36	−1.8	648	3.4	606	3.6	O 53.2	20 47	−2.0	1259	3.0	1211	2.1	W 52.5
8 49	+1.6	519	2.2	471	3.3	W 53.1	21 1	+3.6	1324	1.9	1283	2.8	W 36.8
9 7	−3.0	523	2.8	556	3.9	W 65.4	21 18	+3.2	1523	2.4	1581	4.4	O 49.8
9 24	+1.0	690	3.2	641	3.4	O 67.0	21 30	+4.4	1283	2.8	1324	1.9	W 35.0
9 44	−2.0	664	4.2	713	3.3	O 62.2	21 43	−1.8	1349	3.7	1321	3.1	W 63.8
10 3	−1.2	713	3.3	664	4.2	O 63.9	22 0	+1.2	1596	4.5	1546	4.5	O 58.0
10 23	+7.0	569	2.9	594	2.2	W 33.5	22 12	−3.2	1581	4.4	10	2.7	O 57.5
10 37	+1.4	606	3.6	556	3.9	W 51.0	22 32	−2.4	36	3.2	5	3.8	O 44.5
10 51	+1.8	744	2.1	786	2.8	O 66.3	22 35	−6.8	1424	2.3	1428	2.8	W 70.5
11 1	+2.4	664	4.2	641	3.4	W 62.4	23 1	−4.0	36	3.2	21	2.3	O 48.6
11 18	+1.2	786	2.8	744	2.1	O 70.0	23 8	+4.2	1467	2.8	1431	4.3	W 32.8
11 33	−3.8	760	2.7	818	2.8	O 43.8	23 24	−6.8	1593	4.5	37	(2.2)	O 28.2
11 49	−2.8	818	2.8	760	2.7	O 44.3	23 43	+1.4	39	2.2	10	2.7	O 70.3

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 4	+5.8	144	3.5	99	3.6	O 35.0
0 19	+4.2	91	3.2	55	3.9	O 47.6
0 50	+2.4	1563	4.9	1523	2.4	W 47.0
1 9	−4.4	91	3.2	134	3.0	O 50.0
1 26	+3.4	202	3.6	178	3.6	O 54.9
1 36	+1.8	10	2.7	58	4.1	W 61.4
1 52	−1.8	238	3.0	187	2.9	O 51.2
2 4	+1.8	66	3.2	3	2.1	W 44.8
2 18	+4.0	275	3.3	244	2.9	O 49.6
2 32	−1.4	288	1.0	243	4.1	O 54.2
2 43	+2.8	133	2.0	179	4.4	W 61.2
3 8	−2.0	146	5.4	199	4.3	W 66.7
3 36	+1.6	354	2.6	316	4.8	O 59.1
3 50	+2.4	368	2.4	309	2.7	O 51.1
4 4	+1.6	320	3.2	281	3.5	O 66.8
4 18	−4.2	329	1.0	291	3.2	O 38.8
4 27	+5.0	368	2.4	343	1.8	O 55.8
4 40	−1.4	427	2.0	379	2.9	O 55.5
5 0	−2.8	368	2.4	412	2.9	O 58.9
5 19	−1.8	412	2.9	368	2.4	O 59.9
5 29	+4.8	471	3.3	502	3.4	O 53.2
5 45	+2.4	412	2.9	460	1.9	O 62.0
6 4	−5.6	440	3.4	429	3.1	O 50.6
6 19	−2.6	495	3.4	470	2.5	O 55.5
6 31	+2.2	471	3.3	523	2.8	O 61.8
6 51	+0.8	411	2.9	342	1.7	W 62.8
7 11	+3.0	427	2.0	460	1.9	W 67.2
7 27	+2.0	451	1.5	427	2.0	W 63.6
7 47	+1.2	411	2.9	382	1.0	W 56.3
8 7	−3.0	451	1.5	495	3.4	W 59.9
8 27	−1.8	648	3.4	606	3.6	O 52.2
8 47	+3.2	519	2.2	496	1.1	W 52.8
9 6	−3.4	451	1.5	496	1.1	W 50.4
9 18	+5.6	688	2.7	647	3.4	O 41.6
9 34	−1.8	664	4.2	713	3.3	O 61.0
9 57	−1.4	713	3.3	664	4.2	O 63.4
10 14	+5.0	594	2.2	569	2.9	W 34.0
10 25	+2.8	585	2.1	558	4.1	W 47.1
10 44	+1.4	606	3.6	556	3.9	W 50.0
11 0	+1.6	744	2.1	786	2.8	O 67.8
11 14	−3.6	760	2.7	818	2.8	O 42.6
11 26	−1.0	648	3.4	599	2.0	W 56.6
11 35	−2.8	818	2.8	760	2.7	O 43.5
11 55	−1.6	713	3.3	690	3.2	W 67.0
11 59	−1.6	872	2.8	839	2.9	O 54.4
12 21	−2.2	910	3.7	871	2.6	O 43.9
12 28	−1.2	882	3.4	932	3.7	O 58.6
12 55	−5.4	718	3.4	696	4.9	W 45.5
13 14	+2.0	760	2.7	718	3.4	W 41.6
13 30	−2.8	966	3.2	920	2.4	O 45.4
14 0	−1.6	872	2.8	838	3.1	W 67.0
14 3	−1.4	1039	3.5	984	2.9	O 49.5
14 25	−2.8	838	3.1	872	2.8	W 64.7
14 45	−2.2	1051	1.2	1084	3.2	O 57.8
15 4	+1.6	1039	3.5	1092	2.4	O 60.2
15 18	−1.0	827	4.3	872	2.8	W 56.7
15 37	−6.4	952	3.3	920	2.4	W 44.2
15 55	+4.8	1158	3.0	1137	3.3	O 50.4
16 15	+6.4	1121	1.9	1100	3.1	O 47.7
16 24	+2.2	998	3.4	1051	1.2	W 67.7
16 37	−5.8	1131	3.6	1107	2.7	O 38.2
16 57	+2.6	1098	3.0	1158	3.0	O 60.8
17 12	−1.8	1056	2.6	1012	2.3	W 62.0
17 35	−1.6	1098	3.0	1051	1.2	W 60.4
17 55	+2.0	1211	2.1	1178	3.9	O 64.0
18 9	−1.8	1286	1.0	1265	4.6	O 62.8
18 29	+3.8	1341	3.0	1283	2.8	O 39.2
18 37	+4.0	1088	3.6	1121	1.9	W 47.6
18 53	+0.8	1182	2.8	1134	2.8	W 67.2
19 8	−2.8	1202	4.1	1182	2.8	W 64.7
19 25	+1.8	1282	2.7	1321	3.1	O 75.0
19 38	+1.6	1265	4.6	1226	3.0	W 69.0
19 54	−2.8	1220	3.2	1175	1.9	W 50.9
20 2	+2.8	1226	3.0	1265	4.6	W 66.7
20 31	−0.6	1297	3.6	1227	3.2	W 65.1
21 1	−0.8	1227	3.2	1297	3.6	W 60.0
21 19	+3.4	1324	1.9	1283	2.8	W 35.5
21 34	−1.8	1349	3.7	1321	3.1	W 65.6
21 52	+5.8	5	3.8	1568	4.1	O 38.8
22 6	+1.4	1596	4.5	1546	4.5	O 59.2
22 15	−2.4	3	2.1	1563	4.9	O 48.4
22 52	−2.0	10	2.7	1581	4.4	O 63.4
23 9	−6.0	1457	4.3	1434	3.0	W 50.4
23 29	+4.2	1467	2.8	1431	4.3	W 31.4
23 44	+1.0	1516	1.2	1456	3.6	W 61.4

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 2	+ 1.2	1581	4.4	1525	2.4	W 64.3	11 47	− 1.4	713	3.3	690	3.2	W 68.3
0 26	+ 2.0	1525	2.4	1581	4.4	W 62.0	12 2	+ 8.0	881	1.0	842	2.2	O 29.4
0 33	+ 5.0	144	3.5	99	3.6	O 37.3	12 13	+ 2.2	795	5.1	838	3.1	O 67.4
0 53	− 3.0	10	2.7	1596	4.5	W 68.8	12 28	− 4.8	718	3.4	696	4.9	W 48.8
1 6	− 2.6	134	3.0	91	3.2	O 49.7	12 51	− 2.0	795	5.1	762	3.0	W 67.0
1 19	+ 1.2	58	4.1	10	2.7	W 62.7	13 11	+ 1.2	936	2.7	893	1.0	O 63.6
1 32	+ 1.6	222	4.3	178	3.6	O 55.9	13 16	− 2.4	966	3.2	920	2.4	O 43.9
1 49	+ 4.2	91	3.2	71	2.1	W 49.4	13 33	− 5.0	871	2.6	912	2.9	O 46.6
2 2	+ 2.0	91	3.2	36	3.2	W 48.8	13 47	− 5.4	762	3.0	795	5.1	W 59.1
2 14	− 2.6	244	2.9	210	4.2	O 48.4	13 56	− 1.4	1039	3.5	984	2.9	O 48.2
2 29	+ 2.6	36	3.2	91	3.2	W 46.4	14 11	− 2.8	838	3.1	872	2.8	W 66.3
2 38	− 3.6	275	3.3	244	2.9	O 52.2	14 35	− 0.6	872	2.8	827	4.3	W 65.1
2 57	+ 2.6	133	2.0	179	4.4	W 60.4	14 53	+ 2.6	857	2.4	818	2.8	W 38.0
3 20	− 4.0	309	2.7	368	2.4	O 47.6	15 13	+ 0.8	882	3.4	852	3.3	W 61.5
3 31	5.2	291	3.2	329	1.0	O 36.8	15 29	− 1.2	1123	2.1	1073	2.3	O 55.8
3 50	+ 1.6	187	2.9	133	2.0	W 50.9	15 41	+ 1.2	1092	2.4	1039	3.5	O 65.9
4 2	+ 2.4	368	2.4	309	2.7	O 52.1	15 54	− 4.6	1073	2.3	1098	3.0	O 57.4
4 27	− 2.4	239	4.1	281	3.5	W 67.3	16 19	+ 4.2	1158	3.0	1137	3.3	O 53.9
4 46	− 2.6	368	2.4	412	2.9	O 57.4	16 35	+ 2.0	998	3.4	1051	1.2	W 66.7
4 51	− 2.4	427	2.0	411	2.9	O 58.0	16 47	− 2.2	987	2.2	953	3.4	W 54.4
5 10	− 1.8	412	2.9	368	2.4	O 59.2	17 3	− 2.0	1056	2.6	1012	2.3	W 63.1
5 31	+ 2.6	460	1.9	431	3.1	O 58.1	17 27	− 1.6	1098	3.0	1051	1.2	W 61.2
5 50	− 1.2	492	0.5	460	1.9	O 62.2	17 45	− 2.0	1182	2.8	1226	3.0	O 66.0
6 6	− 2.6	495	3.4	470	2.5	O 53.9	18 5	− 1.2	1226	3.0	1182	2.8	O 68.0
6 14	+ 2.4	523	2.8	495	3.4	O 56.4	18 18	+ 2.6	1121	1.9	1088	3.6	W 49.2
6 33	+ 7.6	411	2.9	412	2.9	W 63.2	18 38	− 7.0	1226	3.0	1231	2.9	O 71.8
6 42	+ 2.0	471	3.3	523	2.8	O 63.0	18 57	+ 0.8	1182	2.8	1134	2.8	W 66.4
7 1	− 4.0	569	2.9	535	1.7	O 32.6	19 11	+ 1.0	1211	2.1	1160	3.6	W 66.3
7 21	+ 1.2	342	1.7	411	2.9	W 58.4	19 29	+ 1.2	1134	2.8	1182	2.8	W 61.4
7 37	+ 2.2	451	1.5	427	2.0	W 62.5	19 46	+ 1.6	1265	4.6	1226	3.0	W 68.5
7 52	− 2.8	451	1.5	495	3.4	W 61.1	20 0	+ 1.6	1160	3.6	1199	3.3	W 58.2
8 11	− 2.0	495	3.4	460	1.9	W 60.7	20 16	+ 2.8	1226	3.0	1265	4.6	W 64.7
8 28	+ 2.2	451	1.5	433	3.4	W 56.3	20 28	− 0.8	1297	3.6	1227	3.2	W 65.8
8 39	+ 1.6	483	3.0	431	3.1	W 47.2	20 44	+ 6.6	1341	3.0	1325	2.3	W 45.7
8 49	− 3.2	451	1.5	496	1.1	W 52.9	20 57	− 1.0	1227	3.2	1297	3.6	W 61.0
9 7	+ 1.8	641	3.4	690	3.2	O 65.2	21 25	− 1.6	1349	3.7	1321	3.1	W 67.3
9 27	+ 2.4	525	2.1	484	1.8	W 43.1	21 44	+ 4.0	1389	3.1	1434	3.0	W 55.6
9 35	+ 1.0	690	3.2	641	3.4	O 68.8	22 3	− 2.2	3	2.1	1563	4.9	O 46.9
9 50	− 1.4	713	3.3	664	4.2	O 62.4	22 22	+ 2.0	1581	4.4	1523	2.4	O 58.2
10 11	− 2.4	664	4.2	712	2.4	O 63.0	22 42	− 1.8	10	2.7	1581	4.4	O 62.0
10 29	− 2.2	648	3.4	622	5.0	W 62.4	22 49	− 4.6	37	(2.2)	1593	4.5	O 26.6
10 51	+ 1.4	606	3.6	556	3.9	W 48.7	23 17	− 2.4	1435	5.2	1403	3.8	W 54.0
11 8	+ 1.8	744	2.1	786	2.8	O 69.3	23 36	+ 2.8	10	2.7	39	2.2	O 70.0
11 26	− 4.8	818	2.8	800	2.3	O 43.2	23 49	+ 1.0	1516	1.2	1456	3.6	W 60.2
11 29	+ 1.0	786	2.8	744	2.1	O 71.5							

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für + 0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 1	− 4.0	21	2.3	71	2.1	O 49.9
0 8	+ 1.4	1581	4.4	1525	2.4	W 63.5
0 27	− 4.0	91	3.2	134	3.0	O 47.3
0 39	+ 2.4	107	3.4	94	3.6	O 69.7
0 58	+ 4.6	144	3.5	99	3.6	O 38.6
1 23	+ 0.8	235	3.4	178	3.6	O 55.6
1 40	+ 1.6	222	4.3	178	3.6	O 57.4
1 59	+ 3.0	202	3.6	178	3.6	O 58.9
2 19	− 1.4	288	1.0	243	4.1	O 52.0
2 38	+ 2.0	222	4.3	199	4.3	O 67.2
2 56	+ 3.4	275	3.3	244	2.9	O 53.9
3 10	+ 2.6	133	2.0	179	4.4	W 59.1
3 37	− 3.6	329	1.0	291	3.2	O 37.0
3 52	+ 1.6	354	2.6	316	4.8	O 62.0
4 7	+ 2.4	281	3.5	320	3.2	O 67.7
4 26	− 1.4	427	2.0	379	2.9	O 53.2
4 39	− 1.6	433	3.4	411	2.9	O 55.9
4 58	+ 4.6	291	3.2	260	4.0	W 37.5
5 18	− 6.4	412	2.9	411	2.9	O 60.6
5 37	− 1.0	492	0.5	451	1.5	O 59.5
5 53	− 2.4	495	3.4	470	2.5	O 52.2
6 7	+ 5.6	343	1.8	379	2.9	W 56.5
6 26	+ 2.6	523	2.8	495	3.4	O 58.4
6 45	+ 4.4	416	1.0	387	1.9	W 40.2
6 59	+ 0.8	411	2.9	342	1.7	W 61.1
7 16	+ 6.8	387	1.9	416	1.0	W 38.7
7 20	− 1.8	354	2.6	412	2.9	W 58.9
7 40	+ 2.8	427	2.0	460	1.9	W 64.0
7 56	− 5.2	595	3.2	585	2.1	O 48.0
8 11	− 7.2	576	3.3	560	2.0	O 38.4
8 25	+ 5.0	484	1.8	519	2.2	W 52.3
8 42	− 2.2	496	1.1	460	1.9	W 55.5
9 1	− 2.4	484	1.8	451	1.5	W 48.7
9 19	+ 3.0	519	2.2	496	1.1	W 49.2
9 38	+ 5.8	597	2.5	576	3.3	W 38.3
9 43	− 1.2	713	3.3	664	4.2	O 61.6
9 59	− 2.2	664	4.2	712	2.4	O 61.9
10 13	+ 9.2	576	3.3	597	2.5	W 36.8
10 29	− 5.2	604	3.1	560	2.0	W 33.4
10 48	+ 4.6	688	2.7	657	3.0	W 44.1
11 8	− 2.6	818	2.8	760	2.7	O 41.8
11 17	− 0.8	648	3.4	599	2.0	W 58.7
11 35	+ 2.2	664	4.2	641	3.4	W 57.6
11 42	− 1.6	872	2.8	839	2.9	O 51.6
12 2	− 7.4	708	3.0	688	2.7	W 40.3

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für + 0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
12 16	+ 5.0	744	2.1	762	3.0	W 70.3
12 24	+ 2.6	893	1.0	936	2.7	O 55.2
12 50	− 4.0	690	3.2	713	3.3	W 56.6
13 8	− 4.6	871	2.6	912	2.9	O 45.2
13 17	+ 1.4	936	2.7	893	1.0	O 65.0
13 29	− 3.2	912	2.9	871	2.6	O 46.1
13 57	− 2.8	838	3.1	872	2.8	W 67.7
14 14	+ 3.4	882	3.4	872	2.8	W 66.3
14 32	− 0.8	872	2.8	827	4.3	W 65.6
14 43	− 1.8	953	3.4	998	3.4	O 67.7
15 7	− 1.0	827	4.3	872	2.8	W 59.5
15 24	+ 1.4	1092	2.4	1056	2.6	O 62.1
15 31	− 4.2	1073	2.3	1098	3.0	W 54.6
15 47	+ 1.0	1092	2.4	1039	3.5	O 67.0
15 52	+ 6.0	920	2.4	912	2.9	W 43.0
16 10	− 2.6	1098	3.0	1073	2.3	O 58.3
16 27	+ 1.4	1051	1.2	998	3.4	W 66.8
16 45	+ 2.0	998	3.4	1051	1.2	W 65.5
16 53	− 1.8	1056	2.6	1012	2.3	W 64.3
17 12	− 7.2	1056	2.6	1051	1.2	W 62.9
17 32	− 1.0	1251	3.3	1199	3.3	O 62.2
17 51	− 1.8	1286	1.0	1265	4.6	O 59.0
18 9	+ 4.0	1137	3.3	1175	1.9	W 58.6
18 25	+ 2.4	1299	4.6	1259	3.0	O 56.7
18 34	+ 5.8	1283	2.8	1341	3.0	O 39.8
18 57	− 1.0	1178	3.9	1125	3.5	W 63.5
19 16	+ 1.0	1211	2.1	1160	3.6	W 65.8
19 35	+ 1.2	1134	2.8	1182	2.8	W 59.9
19 54	+ 1.4	1265	4.6	1226	3.0	W 67.0
20 9	− 5.0	1175	1.9	1220	3.2	W 49.3
20 26	+ 5.8	1269	4.5	1324	1.9	W 35.8
20 30	+ 2.6	1226	3.0	1265	4.6	W 62.2
20 52	− 0.8	1227	3.2	1297	3.6	W 62.2
21 12	+ 1.6	1344	3.5	1403	3.8	W 70.2
21 31	+ 4.4	1563	4.9	1520	3.5	O 41.9
21 37	+ 2.0	1546	4.5	1596	4.5	O 54.5
21 55	+ 3.2	1428	2.8	1424	2.3	W 76.0
22 4	+ 3.6	1389	3.1	1434	3.0	W 54.7
22 23	+ 3.2	21	2.3	1568	4.1	O 42.2
22 33	− 1.8	10	2.7	1581	4.4	O 60.5
22 46	+ 4.8	5	3.8	1568	4.1	O 43.4
23 5	− 2.2	1435	5.2	1403	3.8	W 55.9
23 45	− 2.6	1525	2.4	1514	3.2	W 69.3

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 2	− 2.8	71	2.1	21	2.3	O 49.6
0 15	+ 1.2	1581	4.4	1525	2.4	W 63.0
0 29	− 1.0	1523	2.4	1466	4.2	W 53.0
0 45	+ 1.8	1525	2.4	1581	4.4	W 58.8
1 5	+ 1.0	221	3.5	178	3.6	O 53.6
1 15	− 3.6	3	2.1	1581	4.4	W 54.5
1 31	+ 1.2	58	4.1	10	2.7	W 61.2
1 48	+ 1.4	222	4.3	178	3.6	O 58.6
2 8	+ 5.6	199	4.3	222	4.3	O 63.8
2 22	+ 1.8	91	3.2	36	3.2	W 46.8
2 38	− 4.2	131	2.1	91	3.2	W 44.7
2 53	+ 6.0	270	3.7	248	3.0	O 46.3
3 13	+ 3.4	275	3.3	244	2.9	O 55.3
3 23	+ 2.6	133	2.0	179	4.4	W 57.8
3 42	− 2.0	133	2.0	107	3.4	W 54.8
4 0	+ 1.6	354	2.6	316	4.8	O 63.5
4 20	− 2.6	368	2.4	412	2.9	O 53.8
4 25	+ 2.4	368	2.4	309	2.7	O 54.1
4 41	− 2.2	244	2.9	202	3.6	W 53.7
5 0	+ 2.8	288	1.0	320	3.2	W 69.8
5 21	+ 4.6	291	3.2	260	4.0	W 36.4
5 41	− 2.6	495	3.4	470	2.5	O 50.6
5 57	+ 2.4	460	1.9	431	3.1	O 61.1
6 17	+ 3.6	470	2.5	440	3.4	O 53.1
6 37	+ 2.2	362	3.0	411	2.9	W 61.5
6 51	+ 3.0	412	2.9	451	1.5	W 63.6
7 11	1.6	354	2.6	412	2.9	W 60.4
7 30	− 4.8	595	3.2	585	2.1	O 45.3
7 35	− 6.4	576	3.3	560	2.0	O 36.8
7 54	+ 2.8	427	2.0	460	1.9	W 62.4
8 6	+ 2.2	470	2.5	431	3.1	W 53.6
8 20	− 3.8	460	1.9	495	3.4	W 60.1
8 31	− 2.2	496	1.1	460	1.9	W 57.0
8 50	+ 4.6	484	1.8	519	2.2	W 50.3
9 7	− 1.8	664	4.2	713	3.3	O 56.6
9 24	+ 1.8	641	3.4	690	3.2	O 68.2
9 44	+ 3.8	746	4.8	708	3.0	O 39.9
9 48	− 2.2	664	4.2	712	2.4	O 60.5
10 7	+ 5.4	597	2.5	576	3.3	W 37.0
10 27	− 2.8	595	3.2	557	3.7	W 49.1
10 45	+ 7.6	647	3.4	688	2.7	W 43.6
10 56	− 2.2	710	4.3	744	2.1	O 70.2
11 13	− 1.0	648	3.4	599	2.0	W 59.6
11 32	− 1.6	713	3.3	690	3.2	W 70.5
11 46	+ 2.2	664	4.2	641	3.4	W 55.7
12 9	+ 2.0	762	3.0	744	2.1	W 70.2
12 26	+ 1.8	744	2.1	792	2.6	W 69.5
12 45	− 4.4	871	2.6	912	2.9	O 43.4
12 53	− 0.8	932	3.7	882	3.4	O 62.2
13 13	− 3.2	912	2.9	871	2.6	O 45.4
13 28	+ 4.4	984	2.9	952	3.3	O 43.0
13 40	+ 2.4	1012	2.8	987	2.2	O 51.7
14 12	− 5.0	952	3.3	920	2.4	O 45.4
14 31	+ 3.4	882	3.4	872	2.8	W 65.2
14 45	+ 2.0	1056	2.6	1092	2.4	O 55.3
15 2	− 1.0	827	4.3	872	2.8	W 60.6
15 22	+ 0.8	882	3.4	852	3.3	W 59.3
15 34	+ 2.0	1158	3.0	1100	3.1	O 45.7
15 52	+ 1.0	1092	2.4	1039	3.5	O 67.7
16 5	− 3.6	1137	3.3	1118	1.7	O 51.6
16 25	− 2.2	987	2.2	953	3.4	W 58.0
16 44	− 1.8	1056	2.6	1012	2.3	W 65.5
17 1	+ 4.0	1158	3.0	1137	3.3	O 58.8
17 16	− 2.0	1056	2.6	1017	2.6	W 63.0
17 35	+ 5.4	1088	3.6	1118	1.7	W 55.2
17 53	− 1.4	1226	3.0	1182	2.8	O 66.3
18 2	+ 1.2	1321	3.1	1259	3.0	O 54.7
18 14	+ 2.0	1073	2.3	1039	3.5	W 52.0
18 29	+ 4.0	1137	3.3	1175	1.9	W 57.6
18 43	+ 2.6	1121	1.9	1088	3.6	W 46.5
19 3	+ 5.4	1283	2.8	1341	3.0	O 41.8
19 22	− 1.6	1125	3.5	1178	3.9	W 60.0
19 41	+ 1.2	1134	2.8	1182	2.8	W 58.8
20 1	+ 1.6	1265	4.6	1226	3.0	W 66.0
20 21	− 0.6	1297	3.6	1227	3.2	W 67.5
20 41	− 4.6	1424	2.3	1428	2.8	O 71.2
20 53	− 3.6	1211	2.1	1259	3.0	W 51.8
21 8	− 1.8	1349	3.7	1321	3.1	W 70.2
21 20	+ 1.6	1344	3.5	1403	3.8	W 69.7
21 30	− 5.8	1349	3.7	1348	5.5	W 67.5
21 46	+ 5.4	1341	3.0	1325	2.3	W 41.9
22 2	− 3.0	1352	1.3	1289	4.1	W 39.0
22 22	+ 3.6	1389	3.1	1434	3.0	W 53.2
22 39	+ 3.0	21	2.3	1568	4.1	O 43.5
22 59	+ 3.8	58	4.1	36	3.2	O 51.4
23 32	− 2.6	1525	2.4	1514	3.2	W 71.1
23 43	− 1.6	94	3.6	58	4.1	O 58.9

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 3	+0.8	1516	1.2	1456	3.6	W 57.4	12 35	+1.6	744	2.1	792	2.6	W 69.0
0 21	+1.2	1581	4.4	1525	2.4	W 62.0	12 49	+2.4	893	1.0	936	2.7	O 60.4
0 26	−2.6	134	3.0	91	3.2	O 46.8	13 4	+4.4	744	2.1	762	3.0	W 63.8
0 54	+1.8	1525	2.4	1581	4.4	W 57.2	13 30	−6.2	883	2.1	910	3.7	O 55.5
1 10	+1.0	221	3.5	178	3.6	O 54.8	13 50	+1.8	1017	2.6	987	2.2	O 53.7
1 19	+2.4	178	3.6	222	4.3	O 54.6	14 9	−1.8	830	4.2	792	2.6	W 56.3
1 37	+1.2	58	4.1	10	2.7	W 60.1	14 25	−0.8	872	2.8	827	4.3	W 67.2
1 56	+1.4	127	3.9	94	3.6	W 70.3	14 43	−1.2	998	3.4	953	3.4	O 67.2
2 11	+1.8	10	2.7	58	4.1	W 55.3	15 2	+4.0	1069	3.3	1118	1.7	O 43.2
2 31	−2.0	91	3.2	36	3.2	W 45.6	15 11	−1.0	1123	2.1	1073	2.3	O 52.4
2 51	−3.6	202	3.6	238	3.0	O 62.5	15 26	+1.0	882	3.4	852	3.3	W 58.7
3 9	+1.6	179	4.4	133	2.0	W 58.7	15 44	+2.0	1158	3.0	1100	3.1	O 47.1
3 25	+2.4	379	2.9	319	3.3	O 42.8	16 3	−2.6	910	3.7	882	3.4	W 50.3
3 37	+3.2	390	3.9	329	1.0	O 38.8	16 22	+1.0	1196	4.7	1137	3.3	O 55.6
4 7	−2.6	368	2.4	412	2.9	O 51.7	16 40	−1.2	987	2.2	936	2.7	W 56.5
4 25	−4.6	190	3.0	144	3.5	W 31.9	16 59	+1.8	1182	2.8	1137	3.3	O 59.2
4 43	−1.8	412	2.9	368	2.4	O 56.2	17 19	+4.0	1051	1.2	1039	3.5	W 62.2
4 58	−3.0	390	3.9	440	3.4	O 47.2	17 36	+3.0	1118	1.7	1088	3.6	W 55.1
5 15	−3.6	202	3.6	244	2.9	W 49.3	17 49	−7.0	1182	2.8	1202	4.1	O 65.1
5 33	−1.2	492	0.5	460	1.9	O 59.0	18 8	+1.2	1321	3.1	1259	3.0	O 55.8
5 53	+5.4	502	3.4	495	3.4	O 54.8	18 27	+2.4	1175	1.9	1137	3.3	W 57.6
6 10	−2.8	496	1.1	470	2.5	O 53.1	18 46	−1.0	1178	3.9	1125	3.5	W 65.5
6 28	−1.6	411	2.9	362	3.0	W 61.8	18 50	−2.6	1137	3.3	1105	3.2	W 55.9
6 48	+2.4	362	3.0	411	2.9	W 60.1	19 10	+0.8	1182	2.8	1134	2.8	W 63.8
7 8	+0.8	411	2.9	342	1.7	W 59.5	19 26	+1.0	1211	2.1	1160	3.6	W 63.8
7 29	+4.2	416	1.0	387	1.9	W 37.6	19 41	+1.2	1175	1.9	1123	2.1	W 52.3
7 38	+1.0	342	1.7	411	2.9	W 54.7	19 57	+1.4	1160	3.6	1211	2.1	W 59.3
7 56	−2.6	523	2.8	556	3.9	O 68.0	20 8	+3.6	1231	2.9	1226	3.0	W 65.4
8 10	+2.8	483	3.0	440	3.4	W 47.7	20 25	+1.8	1428	2.8	1399	4.2	O 66.0
8 20	−2.0	496	1.1	460	1.9	W 58.5	20 35	−3.6	1211	2.1	1259	3.0	W 54.8
8 36	−2.4	484	1.8	451	1.5	W 52.4	20 55	+3.8	1324	1.9	1269	4.5	W 34.4
8 58	−1.8	664	4.2	713	3.3	O 55.2	20 59	−1.6	1349	3.7	1321	3.1	W 71.2
9 13	+4.6	484	1.8	519	2.2	W 47.9	21 18	+4.8	1516	1.2	1501	2.9	O 53.9
9 33	+1.6	641	3.4	690	3.2	O 69.5	21 28	+1.6	1344	3.5	1403	3.8	W 69.0
9 37	−2.2	664	4.2	712	2.4	O 59.5	21 47	−3.0	1352	1.3	1289	4.1	W 40.6
9 55	+5.8	606	3.6	595	3.2	W 51.2	21 58	−5.0	1520	3.5	1500	2.0	O 44.1
10 13	−2.6	595	3.2	557	3.7	W 50.6	22 15	−1.8	10	2.7	1581	4.4	O 57.5
10 30	+2.8	623	3.0	664	4.2	W 61.2	22 35	+3.0	1523	2.4	1581	4.4	O 59.9
10 43	−2.6	818	2.8	760	2.7	O 39.5	22 54	+3.0	21	2.3	1568	4.1	O 44.7
10 54	+4.6	688	2.7	647	3.4	W 43.2	22 57	+1.8	1514	3.2	1499	3.3	W 75.5
11 8	−0.8	648	3.4	599	2.0	W 60.8	23 18	+3.8	58	4.1	36	3.2	O 53.9
11 24	−1.4	713	3.3	690	3.2	W 71.8	23 35	−1.6	94	3.6	58	4.1	O 57.6
11 34	+1.6	744	2.1	786	2.8	O 72.8	23 48	−2.6	71	2.1	21	2.3	O 48.7
12 3	+3.4	883	2.1	854	4.9	O 46.4							
12 19	+1.8	762	3.0	744	2.1	W 69.7							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 6	+7.8	1568	4.1	5	3.8	W 45.2
0 19	−1.0	1523	2.4	1466	4.2	W 55.2
0 39	−3.4	3	2.1	1581	4.4	W 58.8
1 3	+1.8	1525	2.4	1581	4.4	W 55.6
1 15	+1.2	221	3.5	178	3.6	O 55.7
1 31	+2.2	178	3.6	222	4.3	O 56.4
1 43	+1.4	58	4.1	10	2.7	W 59.2
2 3	+1.6	127	3.9	94	3.6	W 70.0
2 16	+6.4	99	3.6	144	3.5	W 39.4
2 33	−3.6	202	3.6	238	3.0	O 60.9
2 51	−5.2	99	3.6	66	3.2	W 37.6
2 54	−2.2	238	3.0	202	3.6	O 62.2
3 17	+1.8	179	4.4	133	2.0	W 58.0
3 37	+2.6	379	2.9	319	3.3	O 44.2
3 53	+3.2	390	3.9	329	1.0	O 40.3
4 2	−4.4	190	3.0	144	3.5	W 33.8
4 19	−2.2	244	2.9	202	3.6	W 56.1
4 34	−1.8	412	2.9	368	2.4	O 55.2
4 48	+3.4	429	3.1	387	1.9	O 42.0
5 6	+1.6	320	3.2	288	1.0	W 69.2
5 22	−1.0	492	0.5	451	1.5	O 56.2
5 40	−3.6	320	3.2	362	3.0	W 66.8
5 56	−2.8	496	1.1	470	2.5	O 51.1
6 16	+4.0	368	2.4	343	1.8	W 56.1
6 36	+1.6	411	2.9	362	3.0	W 61.1
6 56	−2.6	451	1.5	495	3.4	O 62.8
7 15	+4.2	388	2.7	429	3.1	W 47.0
7 21	+3.0	412	2.9	451	1.5	W 61.2
7 39	+1.6	460	1.9	427	2.0	W 63.8
7 48	−3.0	451	1.5	496	1.1	W 59.8
8 6	−2.8	440	3.4	411	2.9	W 50.0
8 24	−2.6	484	1.8	451	1.5	W 54.0
8 27	+2.0	470	2.5	431	3.1	W 50.7
8 48	+3.0	519	2.2	484	1.8	W 50.4
8 51	−3.8	460	1.9	496	1.1	W 54.6
9 24	−1.2	713	3.3	664	4.2	O 58.7
9 43	−3.6	569	2.9	525	2.1	W 39.0
10 0	−2.8	595	3.2	557	3.7	W 52.2
10 21	+3.6	746	4.8	708	3.0	O 42.8
10 34	−2.0	710	4.3	744	2.1	O 67.8
10 52	−2.6	657	3.0	606	3.6	W 45.8
11 4	−0.8	648	3.4	599	2.0	W 61.6
11 17	−2.8	647	3.4	606	3.6	W 42.8
11 25	−4.0	606	3.6	657	3.0	W 43.1
11 42	−1.4	599	2.0	648	3.4	W 54.8
h m	m					°
11 56	−6.2	712	2.4	710	4.3	W 65.0
12 20	+3.4	883	2.1	854	4.9	O 48.4
12 28	+2.0	762	3.0	744	2.1	W 68.6
12 45	−1.0	932	3.7	882	3.4	O 60.5
13 1	+2.2	893	1.0	936	2.7	O 62.6
13 20	+4.6	959	3.4	904	3.9	O 35.1
13 37	+1.4	936	2.7	893	1.0	O 67.8
13 59	+2.0	1017	2.6	987	2.2	O 55.4
14 17	+5.4	881	1.0	842	2.2	W 31.4
14 37	−1.4	998	3.4	953	3.4	O 66.5
14 52	+2.0	893	1.0	953	3.4	W 66.5
15 4	+3.2	882	3.4	872	2.8	W 61.0
15 22	+3.8	1069	3.3	1118	1.7	O 45.7
15 40	+6.0	1105	3.2	1098	3.0	O 57.0
15 56	+2.4	1118	1.7	1069	3.3	O 48.6
16 4	−2.2	987	2.2	953	3.4	W 60.2
16 27	+0.8	1196	4.7	1137	3.3	O 56.6
16 47	+1.2	1051	1.2	998	3.4	W 64.5
17 5	−1.8	1182	2.8	1226	3.0	O 59.6
17 19	−0.8	1251	3.3	1199	3.3	O 59.2
17 39	+4.2	1051	1.2	1039	3.5	W 59.4
17 56	−4.2	1017	2.6	1056	2.6	W 56.2
18 14	+1.2	1321	3.1	1259	3.0	O 56.9
18 32	−3.4	1100	3.1	1073	2.3	W 47.4
18 41	−1.0	1178	3.9	1125	3.5	W 66.2
18 59	+5.4	1374	4.8	1357	2.4	O 48.6
19 14	+0.8	1182	2.8	1134	2.8	W 63.0
19 31	+1.0	1211	2.1	1160	3.6	W 63.0
19 45	+1.0	1199	3.3	1160	3.6	W 59.9
20 4	+1.4	1160	3.6	1211	2.1	W 58.0
20 17	−3.4	1211	2.1	1259	3.0	W 57.4
20 34	+1.8	1428	2.8	1399	4.2	O 67.5
20 51	−1.8	1349	2.7	1321	3.1	W 72.7
21 7	−2.4	1259	3.0	1231	2.9	W 52.0
21 14	+3.8	1324	1.9	1269	4.5	W 33.4
21 33	−5.0	1520	3.5	1500	2.0	O 42.6
21 42	+4.6	1516	1.2	1501	2.9	O 56.7
21 55	−5.4	1321	3.1	1349	3.7	W 62.0
22 8	+2.0	1546	4.5	1596	4.5	O 60.1
22 27	+1.6	39	2.2	3	2.1	O 53.4
22 46	+4.6	1568	4.1	21	2.3	O 44.6
23 6	+2.0	1514	3.2	1499	3.3	W 74.2
23 27	−1.6	94	3.6	58	4.1	O 56.2
23 37	+3.6	58	4.1	36	3.2	O 56.1

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr. Gr.	2. Stern Nr. Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr. Gr.	2. Stern Nr. Gr.	Höhe
h m	m			°	h m	m			°
0 0	− 2.6	134 3.0	91 3.2	O 44.0	12 27	− 3.0	912 2.9	871 2.6	O 41.5
0 16	+ 4.2	5 3.8	1568 4.1	W 44.7	12 40	− 0.8	932 3.7	882 3.4	O 59.3
0 33	+ 1.4	1581 4.4	1525 2.4	W 59.9	12 52	+ 1.6	744 2.1	792 2.6	W 66.5
0 45	+ 7.2	1568 4.1	5 3.8	W 43.4	13 12	+ 2.4	893 1.0	936 2.7	O 64.8
1 21	+ 1.0	221 3.5	178 3.6	O 56.8	13 20	− 3.2	910 3.7	883 2.1	O 54.3
1 41	+ 0.8	235 3.4	178 3.6	O 59.3	13 33	+ 1.4	1017 2.6	966 3.2	O 49.5
1 50	+ 1.2	58 4.1	10 2.7	W 58.2	13 53	− 8.6	816 1.7	789 1.6	W 31.1
2 10	+ 3.4	91 3.2	55 3.9	W 46.0	14 9	+ 1.8	1017 2.6	987 2.2	O 57.0
2 25	− 5.0	99 3.6	66 3.2	W 39.5	14 18	− 0.6	872 2.8	827 4.3	W 68.8
2 43	− 2.0	238 3.0	202 3.6	O 61.5	14 35	− 2.8	792 2.6	830 4.2	W 52.6
2 48	+ 6.2	99 3.6	144 3.5	W 38.2	14 52	− 1.2	1084 3.2	1051 1.2	O 58.2
3 5	− 4.4	105 4.1	66 3.2	W 35.5	15 4	− 5.6	1056 2.6	1051 1.2	O 59.6
3 17	− 1.6	239 4.1	288 1.0	O 66.7	15 20	− 2.6	1098 3.0	1073 2.3	O 52.8
3 32	− 1.0	288 1.0	239 4.1	O 67.7	15 38	− 3.8	912 2.9	883 2.1	W 47.1
3 50	+ 2.4	379 2.9	319 3.3	O 45.8	15 53	− 2.0	987 2.2	953 3.4	W 61.5
4 9	− 3.0	390 3.9	329 1.0	O 41.8	16 12	− 7.4	1107 2.7	1151 2.3	O 34.0
4 26	+ 5.4	387 1.9	429 3.1	O 40.2	16 32	− 4.0	953 3.4	987 2.2	W 57.1
4 38	− 3.6	202 3.6	244 2.9	W 54.6	16 50	+ 3.2	1137 3.3	1182 2.8	O 58.6
4 56	+ 2.4	281 3.5	320 3.2	W 68.3	17 6	− 1.8	1125 3.5	1160 3.6	O 74.0
5 14	+ 1.4	320 3.2	288 1.0	W 68.3	17 25	+ 2.0	998 3.4	1051 1.2	W 59.3
5 21	− 1.0	492 0.5	460 1.9	O 56.0	17 37	− 2.8	1036 3.6	984 2.9	W 39.3
5 41	− 2.8	431 3.1	411 2.9	O 60.2	17 53	− 2.4	1088 3.6	1051 1.2	W 55.3
5 57	+ 2.0	523 2.8	484 1.8	O 51.7	18 12	+ 2.4	1098 3.0	1158 3.0	W 60.1
6 8	− 4.6	484 1.8	470 2.5	O 51.7	18 25	− 2.6	1137 3.3	1105 3.2	W 59.5
6 26	+ 2.6	523 2.8	496 1.1	O 56.9	18 38	− 1.8	1100 3.1	1051 1.2	W 47.2
6 46	+ 2.8	379 2.9	343 1.8	W 52.7	18 58	− 1.6	1125 3.5	1178 3.9	W 64.7
7 5	+ 2.8	429 3.1	388 2.7	W 47.4	19 18	+ 1.0	1182 2.8	1134 2.8	W 62.1
7 16	+ 0.8	411 2.9	342 1.7	W 57.9	19 36	+ 1.0	1211 2.1	1160 3.6	W 62.1
7 36	+ 2.8	412 2.9	451 1.5	W 59.7	19 54	− 9.8	1352 1.3	1341 3.0	O 43.0
7 52	− 2.8	440 3.4	411 2.9	W 51.5	20 11	+ 1.4	1160 3.6	1211 2.1	W 56.3
8 12	− 2.4	431 3.1	414 2.0	W 55.4	20 24	+ 1.4	1265 4.6	1226 3.0	W 62.8
8 32	− 3.8	460 1.9	496 1.1	W 57.2	20 43	+ 1.8	1428 2.8	1399 4.2	O 68.8
8 37	+ 2.2	470 2.5	431 3.1	W 49.4	20 55	− 2.4	1259 3.0	1231 2.9	W 54.7
8 57	− 1.2	484 1.8	434 1.0	W 50.8	21 8	− 5.0	1520 3.5	1500 2.0	O 40.6
9 15	− 2.2	664 4.2	712 2.4	O 56.2	21 28	− 5.4	1321 3.1	1349 3.7	W 67.3
9 25	− 3.6	569 2.9	525 2.1	W 40.0	21 44	+ 1.4	1344 3.5	1403 3.8	W 66.4
9 43	− 1.4	712 2.4	664 4.2	O 59.6	21 51	− 4.4	1289 4.1	1352 1.3	W 40.6
10 3	− 9.6	696 4.9	718 3.4	O 52.5	22 5	+ 4.4	1516 1.2	1501 2.9	O 58.8
10 23	+ 2.8	645 3.9	607 4.6	W 49.4	22 18	+ 2.0	1546 4.5	1596 4.5	O 62.1
10 39	− 2.8	657 3.0	606 3.6	W 46.8	22 35	+ 1.8	39 2.2	3 2.1	O 55.2
10 58	+ 2.6	623 3.0	664 4.2	W 58.7	22 45	+ 1.2	1596 4.5	1546 4.5	O 65.2
11 5	− 4.0	606 3.6	657 3.0	W 45.1	22 58	+ 3.0	1428 2.8	1424 2.3	W 65.5
11 24	+ 4.2	839 2.9	818 2.8	O 46.3	23 16	+ 1.8	1514 3.2	1499 3.3	W 73.2
11 38	+ 4.2	688 2.7	647 3.4	W 40.7	23 34	− 1.2	1457 4.3	1398 4.3	W 50.4
11 46	− 4.2	762 3.0	795 5.1	O 68.2	23 42	− 2.6	10 2.7	1596 4.5	O 73.0
12 7	− 5.4	842 2.2	808 1.4	O 31.6					

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 10	−1.0	1523	2.4	1466	4.2	W 57.0	12 51	−2.6	838	3.1	872	2.8	O 66.5
0 22	+2.2	179	4.4	131	2.1	O 43.4	13 4	−3.0	910	3.7	883	2.1	O 53.0
0 38	−1.4	39	2.2	94	3.6	O 71.8	13 24	+2.4	893	1.0	936	2.7	O 66.7
0 56	+2.6	10	2.7	39	2.2	W 70.8	13 40	+1.4	1017	2.6	966	3.2	O 50.8
1 13	+1.2	178	3.6	235	3.4	O 54.8	13 55	−1.8	953	3.4	998	3.4	O 61.0
1 26	+1.0	221	3.5	178	3.6	O 58.1	14 15	−0.8	872	2.8	827	4.3	W 69.5
1 45	+1.0	235	3.4	178	3.6	O 60.0	14 29	+2.4	1012	2.3	987	2.2	O 59.7
1 58	−3.6	202	3.6	238	3.0	O 56.6	14 46	−1.4	1084	3.2	1051	1.2	O 56.7
2 18	+1.6	127	3.9	94	3.6	W 68.3	15 7	−2.4	1098	3.0	1073	2.3	O 50.7
2 33	−2.0	238	3.0	202	3.6	O 60.5	15 23	−2.6	910	3.7	882	3.4	W 56.1
2 50	−4.6	133	2.0	127	3.9	W 63.8	15 43	−2.2	987	2.2	953	3.4	W 62.4
3 9	−1.8	239	4.1	288	1.0	O 65.5	16 3	+1.0	1148	3.4	1098	3.0	O 60.9
3 27	−1.2	288	1.0	239	4.1	O 67.0	16 21	−1.2	987	2.2	936	2.7	W 59.9
3 45	−6.8	144	3.5	190	3.0	W 35.0	16 38	−2.0	1056	2.6	1017	2.6	W 67.8
4 2	+2.4	379	2.9	319	3.3	O 47.0	16 58	+2.6	1012	2.3	998	3.4	W 63.2
4 20	+3.2	275	3.3	244	2.9	W 56.4	17 15	−3.4	1026	4.0	984	2.9	W 41.8
4 34	−9.0	238	3.0	239	4.1	W 62.6	17 35	+2.0	998	3.4	1051	1.2	W 57.8
4 53	+5.4	387	1.9	429	3.1	O 42.6	17 50	+1.6	1259	3.0	1321	3.1	O 53.3
5 8	+2.4	281	3.5	320	3.2	W 67.7	18 7	+1.6	1158	3.0	1098	3.0	W 59.9
5 27	−3.0	431	3.1	411	2.9	O 59.0	18 26	+1.2	1321	3.1	1259	3.0	O 59.3
5 45	−4.4	484	1.8	470	2.5	O 49.2	18 40	+2.6	1374	4.8	1325	2.3	O 44.7
6 3	−4.0	471	3.3	460	1.9	O 61.4	18 54	−1.4	1137	3.3	1092	2.4	W 56.9
6 10	−1.2	434	1.0	479	2.9	O 72.3	19 7	+2.0	1211	2.1	1178	3.9	W 63.6
6 29	−2.6	451	1.5	495	3.4	O 61.0	19 23	+0.8	1182	2.8	1134	2.8	W 60.9
6 46	−2.8	343	1.8	320	3.2	W 54.6	19 43	−3.4	1211	2.1	1259	3.0	W 61.0
7 5	+2.2	412	2.9	460	1.9	W 64.3	19 56	+1.2	1199	3.3	1160	3.6	W 57.8
7 23	+2.2	362	3.0	411	2.9	W 55.3	20 16	−4.6	1389	3.1	1374	4.8	O 57.0
7 38	−2.8	440	3.4	411	2.9	W 53.4	20 26	+1.6	1282	2.7	1321	3.1	W 74.5
7 55	+1.6	460	1.9	427	2.0	W 61.6	20 43	−2.4	1259	3.0	1231	2.9	W 56.2
8 13	−3.8	460	1.9	496	1.1	W 59.4	21 3	−2.8	1352	1.3	1289	4.1	W 44.2
8 30	−4.4	604	3.1	560	2.0	O 36.0	21 18	−1.8	1357	2.4	1299	4.6	W 54.9
8 50	−2.8	484	1.8	460	1.9	W 52.2	21 32	+1.0	1403	3.8	1344	3.5	W 67.5
9 4	−2.2	664	4.2	712	2.4	O 54.7	21 51	+1.6	1344	3.5	1403	3.8	W 65.5
9 17	+2.8	519	2.2	484	1.8	W 47.1	22 10	−2.2	1435	5.2	1403	3.8	W 63.5
9 36	−1.6	712	2.4	664	4.2	O 58.7	22 28	+2.0	1546	4.5	1596	4.5	O 63.6
10 1	+4.6	731	3.6	718	3.4	O 52.9	22 47	+2.2	1434	3.0	1389	3.1	W 50.3
10 17	−4.0	718	3.4	696	4.9	O 53.3	22 51	+1.4	1596	4.5	1546	4.5	O 65.9
10 37	+2.8	645	3.9	607	4.6	W 48.4	23 10	−2.6	71	2.1	21	2.3	O 45.5
10 55	−0.8	648	3.4	599	2.0	W 63.2	23 29	−2.8	10	2.7	1596	4.5	O 72.0
11 15	+9.0	710	4.3	712	2.4	W 68.2	23 46	−5.6	1488	3.8	1451	1.8	W 37.0
11 29	−1.2	599	2.0	648	3.4	W 57.8							
11 45	+4.0	839	2.9	818	2.8	O 48.6							
12 2	−2.0	786	2.8	821	2.8	O 73.0							
12 10	+6.6	854	4.9	883	2.1	O 47.6							
12 36	−0.8	932	3.7	882	3.4	O 58.5							

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 5	−1.0	1523	2.4	1466	4.2	W 58.3	11 47	+4.6	857	2.4	816	1.7	O 32.5
0 29	−6.8	91	3.2	131	2.1	O 44.6	12 5	+4.0	839	2.9	818	2.8	O 50.3
0 46	+1.2	1581	4.4	1525	2.4	W 58.0	12 13	−1.0	821	2.8	786	2.8	O 74.0
0 58	+4.2	5	3.8	1568	4.1	W 42.2	12 32	−0.8	932	3.7	882	3.4	O 57.6
1 9	+2.6	10	2.7	39	2.2	W 69.0	12 49	−3.0	910	3.7	883	2.1	O 51.2
1 19	+1.2	178	3.6	235	3.4	O 56.0	13 9	+1.8	744	2.1	792	2.6	W 64.3
1 31	+1.0	221	3.5	178	3.6	O 59.0	13 30	+2.2	953	3.4	910	3.7	O 57.1
1 50	+1.0	235	3.4	178	3.6	O 61.0	13 50	+1.6	1012	2.3	966	3.2	O 52.2
2 5	+2.2	178	3.6	222	4.3	O 61.2	14 11	−0.8	872	2.8	827	4.3	W 70.2
2 25	+1.4	222	4.3	178	3.6	O 62.9	14 28	+2.0	1017	2.6	987	2.2	O 60.0
2 44	+3.4	91	3.2	55	3.9	W 42.8	14 45	−5.0	1012	2.3	1039	3.5	O 61.9
2 52	−2.0	133	2.0	107	3.4	W 64.0	15 4	+1.4	953	3.4	893	1.0	W 65.0
3 6	+4.0	144	3.5	99	3.6	W 36.8	15 22	+2.0	893	1.0	953	3.4	W 63.5
3 26	−1.4	281	3.5	239	4.1	O 66.3	15 30	−2.0	1039	3.5	1012	2.3	O 67.7
3 43	+3.6	319	3.3	379	2.9	O 45.4	15 52	−4.0	953	3.4	987	2.2	W 61.9
4 3	−3.4	202	3.6	244	2.9	W 58.0	16 8	+1.0	1148	3.4	1098	3.0	O 61.8
4 18	+5.0	199	4.3	222	4.3	W 63.8	16 25	+2.0	1158	3.0	1100	3.1	O 52.1
4 36	+3.2	275	3.3	244	2.9	W 55.6	16 47	−2.0	1125	3.5	1160	3.6	O 70.8
4 47	−3.6	320	3.2	362	3.0	O 67.2	17 6	+1.2	1051	1.2	998	3.4	W 61.9
4 58	−3.0	230	3.0	187	2.9	W 39.3	17 21	−1.2	1226	3.0	1182	2.8	O 61.9
5 12	−3.0	431	3.1	411	2.9	O 57.4	17 41	−3.4	1100	3.1	1073	2.3	W 52.4
5 29	+1.6	320	3.2	288	1.0	W 66.5	18 0	−2.4	1137	3.3	1105	3.2	W 61.9
5 43	−4.0	471	3.3	460	1.9	O 58.5	18 20	−1.8	1100	3.1	1051	1.2	W 49.9
5 59	+5.2	502	3.4	496	1.1	O 54.5	18 36	+2.4	1098	3.0	1158	3.0	W 57.8
6 17	+2.0	523	2.8	484	1.8	O 54.8	18 47	−1.4	1137	3.3	1092	2.4	W 58.4
6 36	−1.8	495	3.4	451	1.5	O 61.1	19 1	+5.8	1352	1.3	1396	4.9	O 40.2
6 52	+2.6	523	2.8	496	1.1	O 60.2	19 17	+2.0	1211	2.1	1178	3.9	W 62.8
6 59	+1.6	411	2.9	362	3.0	W 58.4	19 28	+1.6	1428	2.8	1389	3.1	O 53.2
7 16	+2.2	412	2.9	460	1.9	W 63.2	19 46	+1.0	1211	2.1	1160	3.6	W 60.2
7 34	+2.2	362	3.0	411	2.9	W 53.7	20 5	−4.8	1193	1.0	1175	1.9	W 46.1
7 49	−2.2	431	3.1	414	2.0	W 59.3	20 26	+4.2	1399	4.2	1428	2.8	O 66.8
8 8	−4.4	604	3.1	560	2.0	O 35.3	20 45	+3.2	1341	3.0	1283	2.8	W 42.2
8 19	−4.4	451	1.5	484	1.8	W 55.0	21 7	+4.8	1283	2.8	1341	3.0	W 41.4
8 36	−2.8	484	1.8	460	1.9	W 54.2	21 36	−5.8	1523	2.4	1516	1.2	O 56.0
8 53	−2.2	664	4.2	712	2.4	O 52.8	21 59	+1.6	1344	3.5	1403	3.8	W 64.5
9 5	−1.2	713	3.3	664	4.2	O 55.4	22 29	−2.4	1525	2.4	1514	3.2	O 73.5
9 28	−1.6	712	2.4	664	4.2	O 57.6	22 52	+1.6	39	2.2	3	2.1	O 58.0
9 38	−4.8	557	3.7	595	3.2	W 54.3	22 58	+2.2	1434	3.0	1389	3.1	W 49.0
9 52	−5.6	533	4.4	519	2.2	W 41.6	23 18	−5.6	1488	3.8	1451	1.8	W 39.1
10 2	−2.2	710	4.3	744	2.1	O 62.6	23 34	+1.8	1514	3.2	1499	3.3	W 70.3
10 21	+3.6	800	2.3	748	2.3	O 33.4	23 58	+7.4	1520	3.5	1563	4.9	W 46.0
10 33	−3.0	647	3.4	606	3.6	W 46.2							
10 53	+1.8	664	4.2	623	3.0	W 58.7							
11 16	−6.2	666	4.8	636	3.7	W 32.6							
11 25	+2.8	623	3.0	664	4.2	W 55.0							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 0	−0.8	1523	2.4	1466	4.2	W 59.3
0 16	+4.6	1568	4.1	21	2.3	W 46.6
0 24	−1.6	39	2.2	94	3.6	O 70.5
0 40	+3.8	131	2.1	91	3.2	O 45.0
0 51	+1.2	39	2.2	10	2.7	W 70.8
1 19	+4.2	5	3.8	1568	4.1	W 40.4
1 36	+1.0	221	3.5	178	3.6	O 60.0
1 55	+0.8	235	3.4	178	3.6	O 61.8
2 13	−2.0	238	3.0	202	3.6	O 58.5
2 32	+3.8	270	3.7	230	3.0	O 41.6
2 51	−1.6	239	4.1	288	1.0	O 62.9
3 4	−9.4	238	3.0	239	4.1	O 65.0
3 19	−1.4	281	3.5	239	4.1	O 65.8
3 39	−4.2	270	3.7	319	3.3	O 46.2
3 57	−2.8	319	3.3	270	3.7	O 46.8
4 17	+3.2	411	2.9	388	2.7	O 48.3
4 34	+5.0	414	2.0	412	2.9	O 58.3
4 52	+3.4	275	3.3	244	2.9	W 54.3
5 9	+1.4	320	3.2	281	3.5	W 67.0
5 32	+2.4	281	3.5	320	3.2	W 65.0
5 45	−2.4	319	3.3	275	3.3	W 48.0
6 3	−2.8	451	1.5	495	3.4	O 58.4
6 21	−3.4	275	3.3	319	3.3	W 44.4
6 30	−3.6	460	1.9	495	3.4	O 62.0
6 50	−3.0	451	1.5	496	1.1	O 60.6
7 10	+2.4	460	1.9	431	3.1	W 63.1
7 27	+2.2	412	2.9	460	1.9	W 62.0
7 47	+2.8	429	3.1	388	2.7	W 43.4
8 3	+2.0	471	3.3	523	2.8	W 65.5
8 22	−2.8	484	1.8	460	1.9	W 55.9
8 37	−1.2	484	1.8	434	1.0	W 54.5
8 59	−1.4	713	3.3	664	4.2	O 54.3
9 20	−1.4	712	2.4	664	4.2	O 56.3
9 37	−4.0	718	3.4	696	4.9	O 50.0
9 55	−6.0	712	2.4	710	4.3	O 62.8
10 28	−1.4	744	2.1	710	4.3	O 66.0
10 47	−1.0	648	3.4	599	2.0	W 65.0
11 5	+2.8	645	3.9	607	4.6	W 46.2
11 14	+4.6	838	3.1	830	4.2	O 52.7
11 38	+5.8	708	3.0	746	4.8	W 44.8
11 48	−8.6	816	1.7	789	1.6	O 32.6
12 8	−1.2	821	2.8	786	2.8	O 73.5
12 28	−0.8	932	3.7	882	3.4	O 56.5
12 34	−3.2	910	3.7	883	2.1	O 49.5
12 52	+1.0	792	2.6	744	2.1	W 65.9
h m	m					°
13 6	+2.0	762	3.0	744	2.1	W 62.9
13 24	−1.8	830	4.2	792	2.6	W 62.0
13 42	+3.4	987	2.2	1017	2.6	O 52.7
13 58	+1.8	1012	2.3	966	3.2	O 53.6
14 12	−1.2	998	3.4	953	3.4	O 63.1
14 31	−1.0	827	4.3	872	2.8	W 68.0
14 49	−3.8	842	2.2	800	2.3	W 32.2
14 57	−2.6	910	3.7	882	3.4	W 58.8
15 11	+1.2	953	3.4	893	1.0	W 64.4
15 30	+4.0	984	2.9	952	3.3	W 48.5
15 50	+8.0	952	3.3	984	2.9	W 48.0
16 9	−1.2	987	2.2	936	2.7	W 62.0
16 16	−2.2	1051	1.2	1098	3.0	O 63.2
16 35	+2.0	1158	3.0	1100	3.1	O 53.2
16 55	−2.8	1036	3.6	984	2.9	W 43.2
17 15	−1.4	1226	3.0	1182	2.8	O 60.6
17 35	+5.8	1105	3.2	1098	3.0	W 64.0
17 55	−2.6	1220	3.2	1175	1.9	O 54.9
18 15	−5.4	1105	3.2	1137	3.3	W 60.9
18 34	−1.6	1125	3.5	1178	3.9	W 67.8
18 54	+3.8	1158	3.0	1137	3.3	W 56.5
19 13	−9.2	1131	3.6	1121	1.9	W 39.8
19 31	+1.0	1182	2.8	1134	2.8	W 59.3
19 51	+1.0	1211	2.1	1160	3.6	W 59.3
20 8	+1.2	1199	3.3	1160	3.6	W 55.3
20 21	+0.8	1321	3.1	1282	2.7	W 74.2
20 32	−3.6	1182	2.8	1220	3.2	W 49.3
20 47	+4.0	1399	4.2	1428	2.8	O 69.8
21 1	+3.2	1341	3.0	1283	2.8	W 41.5
21 24	−3.0	1299	4.6	1357	2.4	W 54.9
21 42	+1.0	1403	3.8	1344	3.5	W 66.0
22 7	+1.4	1344	3.5	1403	3.8	W 62.9
22 17	−2.6	1525	2.4	1514	3.2	O 72.2
22 48	+2.0	1546	4.5	1596	4.5	O 66.0
23 0	+1.8	39	2.2	3	2.1	O 59.2
23 11	+4.4	1516	1.2	1501	2.9	W 59.0
23 31	−2.4	1403	3.8	1457	4.3	W 50.8
23 43	+1.8	1514	3.2	1499	3.3	W 68.5
23 55	+4.0	1563	4.9	1520	3.5	W 46.0

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0,1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 16	− 1.4	39	2.2	94	3.6	O 69.3
0 22	+ 3.0	21	2.3	1568	4.1	W 46.1
0 39	+ 4.6	1568	4.1	21	2.3	W 45.7
0 57	+ 1.4	39	2.2	10	2.7	W 70.0
1 7	+ 3.6	58	4.1	36	3.2	W 58.9
1 31	+ 1.4	178	3.6	235	3.4	O 58.6
1 42	− 4.8	133	2.0	127	3.9	O 67.5
2 2	− 7.2	144	3.5	190	3.0	O 37.0
2 20	− 5.0	71	2.1	58	4.1	W 51.5
2 32	− 2.0	133	2.0	107	3.4	W 66.8
2 51	+ 3.8	270	3.7	230	3.0	O 42.8
3 10	− 1.2	288	1.0	239	4.1	O 64.8
3 26	+ 2.6	379	2.9	329	1.0	O 40.5
3 43	− 2.8	319	3.3	270	3.7	O 46.2
4 1	+ 2.8	368	2.4	319	3.3	O 48.4
4 18	+ 3.6	319	3.3	379	2.9	O 48.6
4 33	+ 3.2	411	2.9	388	2.7	O 50.2
4 43	− 3.0	431	3.1	411	2.9	O 53.2
4 59	+ 5.4	414	2.0	412	2.9	O 62.6
5 19	− 9.4	388	2.7	379	2.9	O 52.9
5 33	− 2.4	319	3.3	275	3.3	W 49.1
5 49	− 2.6	451	1.5	495	3.4	O 56.1
6 4	− 2.8	343	1.8	320	3.2	W 60.5
6 19	− 1.8	495	3.4	451	1.5	O 59.5
6 37	+ 2.2	523	2.8	484	1.8	O 57.1
6 52	+ 5.4	502	3.4	496	1.1	O 61.2
7 7	+ 8.2	585	2.1	576	3.3	O 38.6
7 26	− 2.2	431	3.1	414	2.0	W 63.2
7 46	+ 1.8	451	1.5	412	2.9	W 57.8
8 7	+ 5.6	431	3.1	460	1.9	W 57.9
8 25	+ 6.0	495	3.4	523	2.8	W 63.8
8 31	− 1.4	484	1.8	434	1.0	W 55.6
8 48	+ 3.8	471	3.3	502	3.4	W 58.9
8 52	− 1.2	713	3.3	664	4.2	O 53.1
9 10	− 5.6	460	1.9	484	1.8	W 49.3
9 19	− 2.8	696	4.9	647	3.4	O 46.5
9 40	− 2.0	710	4.3	744	2.1	O 58.6
9 56	− 1.6	558	4.1	528	5.3	W 56.7
10 21	− 3.8	690	3.2	713	3.3	O 72.3
10 26	+ 5.0	748	2.3	800	2.3	O 34.1
10 42	− 0.8	648	3.4	599	2.0	W 65.9
10 57	+ 3.6	800	2.3	748	2.3	O 36.1
11 11	− 1.4	599	2.0	648	3.4	W 61.5
11 19	+ 2.6	645	3.9	607	4.6	W 44.7
11 37	+ 4.6	838	3.1	830	4.2	O 56.5
11 49	+ 3.6	746	4.8	708	3.0	W 44.4
12 7	+ 6.0	708	3.0	746	4.8	W 43.7
12 24	+ 1.6	744	2.1	786	2.8	W 72.8
12 44	− 1.4	872	2.8	838	3.1	O 65.6
13 4	− 5.8	854	4.9	839	2.9	O 52.8
13 16	+ 2.0	762	3.0	744	2.1	W 61.0
13 27	− 1.8	953	3.4	998	3.4	O 55.8
13 37	− 3.0	792	2.6	830	4.2	W 61.0
13 53	+ 2.2	953	3.4	910	3.7	O 59.5
14 7	+ 1.6	1012	2.3	966	3.2	O 54.9
14 26	− 1.2	827	4.3	872	2.8	W 68.8
14 45	− 1.0	888	4.9	843	1.1	W 63.5
15 5	+ 2.4	1012	2.3	987	2.2	O 63.8
15 21	− 5.4	882	3.4	910	3.7	W 56.6
15 41	− 1.8	1056	2.6	1012	2.3	O 66.7
15 56	+ 3.2	1105	3.2	1088	3.6	O 57.9
16 5	− 2.4	1051	1.2	1098	3.0	O 62.4
16 22	+ 3.0	1100	3.1	1158	3.0	O 52.1
16 41	− 3.0	1036	3.6	984	2.9	W 44.2
16 58	− 2.6	1202	4.1	1182	2.8	O 58.1
17 8	− 1.2	1226	3.0	1182	2.8	O 59.3
17 26	+ 1.6	1265	4.6	1193	1.0	O 50.0
17 42	− 2.4	1220	3.2	1175	1.9	O 53.9
18 2	− 1.8	1100	3.1	1051	1.2	W 52.3
18 15	+ 1.6	1259	3.0	1321	3.1	O 58.3
18 33	− 1.4	1137	3.3	1092	2.4	W 60.8
18 44	+ 1.2	1321	3.1	1259	3.0	O 62.1
19 0	+ 2.4	1098	3.0	1158	3.0	W 54.5
19 17	− 4.8	1193	1.0	1175	1.9	W 51.0
19 37	+ 2.4	1175	1.9	1137	3.3	W 50.0
19 56	+ 1.0	1211	2.1	1160	3.6	W 58.3
20 14	− 3.8	1182	2.8	1220	3.2	W 52.1
20 31	+ 5.2	1259	3.0	1299	4.6	W 59.2
20 51	+ 1.8	1282	2.7	1321	3.1	W 70.5
21 10	+ 5.4	1374	4.8	1357	2.4	W 56.2
21 21	+ 2.0	1581	4.4	1520	3.5	O 44.8
21 46	− 1.6	1325	2.3	1265	4.6	W 46.4
22 4	− 2.6	1525	2.4	1514	3.2	O 70.5
22 23	+ 2.6	3	2.1	39	2.2	O 53.4
22 45	− 1.6	1457	4.3	1403	3.8	W 56.8
23 4	+ 1.0	85	3.4	36	3.2	O 55.1
23 19	− 2.4	1403	3.8	1457	4.3	W 52.8
23 33	+ 4.6	1516	1.2	1501	2.9	W 57.5
23 52	+ 2.0	1514	3.2	1499	3.3	W 67.0
23 56	− 1.0	1523	2.4	1466	4.2	W 60.0

Frühlingspunkts-Orts-Zeit		Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	Gr.	2. Stern Nr.	Gr.	Höhe	Frühlingspunkts-Orts-Zeit		Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	Gr.	2. Stern Nr.	Gr.	Höhe
h	m	m					°	h	m	m					°
0	1	−4.0	131	2.1	91	3.2	O 41.8	12	32	+1.6	744	2.1	786	2.8	W 72.3
0	19	−5.4	99	3.6	66	3.2	O 40.8	12	37	−1.6	872	2.8	838	3.1	O 65.0
0	37	+3.0	21	2.3	1568	4.1	W 45.6	13	3	+1.2	792	2.6	744	2.1	W 64.2
1	2	+4.6	1568	4.1	21	2.3	W 44.4	13	22	−3.0	792	2.6	830	4.2	W 62.5
1	18	−4.8	133	2.0	127	3.9	O 65.8	13	39	+2.4	966	3.2	1012	2.3	O 51.0
1	26	−8.0	144	3.5	190	3.0	O 35.7	13	59	−1.2	998	3.4	953	3.4	O 60.9
1	48	+2.6	10	2.7	39	2.2	W 62.1	14	19	−1.4	818	2.8	762	3.0	W 47.7
2	4	+0.8	235	3.4	178	3.6	O 63.6	14	46	−5.0	800	2.3	842	2.2	W 32.6
2	22	−2.0	133	2.0	107	3.4	W 67.8	15	2	−3.6	1012	2.3	1056	2.6	O 62.9
2	34	+1.2	292	3.9	244	2.9	O 56.4	15	15	+7.6	1073	2.3	1069	3.3	O 48.8
2	49	+1.4	127	3.9	94	3.6	W 63.5	15	34	+4.6	959	3.4	904	3.9	W 36.4
3	5	−1.4	281	3.5	239	4.1	O 63.9	15	53	−2.4	1051	1.2	1098	3.0	O 61.2
3	24	+1.4	354	2.6	309	2.7	O 53.7	16	12	+3.0	1105	3.2	1088	3.6	O 59.3
3	39	+2.8	379	2.9	329	1.0	O 42.1	16	24	−2.0	936	2.7	987	2.2	W 60.2
3	54	−3.8	320	3.2	362	3.0	O 60.8	16	37	+3.0	1100	3.1	1158	3.0	O 53.5
4	12	−3.2	230	3.0	187	2.9	W 43.4	16	50	−3.6	966	3.2	953	3.4	W 50.6
4	32	−1.8	362	3.0	320	3.2	O 65.5	17	4	+2.0	1193	1.0	1265	4.6	O 47.5
4	49	+3.2	411	2.9	388	2.7	O 52.1	17	14	−4.0	1051	1.2	1088	3.6	W 59.8
5	11	−2.8	244	2.9	222	4.3	W 54.2	17	34	+1.4	1265	4.6	1193	1.0	O 51.1
5	27	+3.4	460	1.9	440	3.4	O 53.5	17	53	−1.8	1100	3.1	1051	1.2	W 53.3
5	42	+5.4	451	1.5	440	3.4	O 55.1	18	9	+1.4	1084	3.2	1125	3.5	W 69.5
5	56	+2.4	281	3.5	320	3.2	W 61.4	18	26	−1.4	1137	3.3	1092	2.4	W 61.8
6	16	+3.2	502	3.4	484	1.8	O 56.1	18	45	−2.2	1131	3.6	1073	2.3	W 42.9
6	31	−2.0	495	3.4	460	1.9	O 61.5	18	56	+4.0	1325	2.3	1374	4.8	O 47.2
6	48	+2.0	523	2.8	484	1.8	O 58.5	19	12	+2.4	1098	3.0	1158	3.0	W 52.6
7	1	−6.6	320	3.2	343	1.8	W 52.3	19	23	−2.6	1193	1.0	1158	3.0	W 51.0
7	15	−2.4	431	3.1	414	2.0	W 64.5	19	40	+0.8	1182	2.8	1134	2.8	W 57.1
7	35	+2.4	460	1.9	431	3.1	W 61.2	19	59	−1.6	1349	3.7	1321	3.1	O 73.2
7	55	+1.8	451	1.5	412	2.9	W 56.3	20	16	+2.4	1299	4.6	1259	3.0	W 60.1
8	15	+2.4	523	2.8	495	3.4	W 64.5	20	30	+1.0	1321	3.1	1282	2.7	W 73.0
8	27	+1.6	460	1.9	427	2.0	W 55.9	20	50	−5.0	1231	2.9	1259	3.0	W 55.5
8	42	−5.8	460	1.9	484	1.8	W 53.8	21	2	+1.4	1265	4.6	1226	3.0	W 55.4
8	55	+6.2	495	3.4	523	2.8	W 60.2	21	31	+2.0	1581	4.4	1520	3.5	O 46.1
9	5	−1.4	712	2.4	664	4.2	O 53.9	21	51	−2.4	1525	2.4	1514	3.2	O 68.7
9	25	−4.2	606	3.6	657	3.0	O 48.4	21	53	+1.0	1403	3.8	1344	3.5	W 64.3
9	42	−7.0	666	4.8	636	3.7	O 34.4	22	22	+1.6	1344	3.5	1403	3.8	W 59.9
10	2	−3.8	690	3.2	713	3.3	O 69.7	22	37	−1.6	1457	4.3	1403	3.8	W 58.0
10	15	−1.4	744	2.1	710	4.3	O 64.2	22	57	−3.6	3	2.1	1581	4.4	O 58.7
10	31	−1.4	713	3.3	690	3.2	O 72.7	23	17	+1.6	39	2.2	3	2.1	O 61.6
10	51	+5.2	748	2.3	800	2.3	O 36.0	23	51	−1.0	1523	2.4	1466	4.2	W 61.1
11	4	−1.2	599	2.0	648	3.4	W 62.9								
11	23	−2.0	786	2.8	821	2.8	O 66.7								
11	33	+5.0	731	3.6	718	3.4	W 57.1								
11	57	−1.0	821	2.8	786	2.8	O 71.8								
12	7	+3.6	746	4.8	708	3.0	W 43.5								

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 2	−1.6	39	2.2	94	3.6	O 67.5	12 25	+3.8	746	4.8	708	3.0	W 42.5
0 21	−1.0	94	3.6	39	2.2	O 69.4	12 40	+1.8	744	2.1	786	2.8	W 70.8
0 29	+2.8	1523	2.4	1581	4.4	W 56.7	13 26	+8.8	816	1.7	857	2.4	W 35.0
0 45	−2.8	1523	2.4	1514	3.2	W 54.1	13 46	−3.8	912	2.9	883	2.1	O 52.0
0 54	−5.2	133	2.0	127	3.9	O 63.1	14 3	+3.4	1032	4.2	979	3.2	O 31.0
1 11	+1.4	39	2.2	10	2.7	W 67.8	14 21	−5.4	800	2.3	842	2.2	W 34.6
1 27	−4.8	190	3.0	144	3.5	O 35.6	14 35	+3.6	987	2.2	1017	2.6	O 61.5
1 44	+1.2	178	3.6	235	3.4	O 61.0	14 48	−2.2	1039	3.5	1012	2.3	O 61.9
2 1	+2.8	10	2.7	39	2.2	W 59.4	15 6	+2.0	1017	2.6	987	2.2	O 64.7
2 19	−2.4	239	4.1	281	3.5	O 57.4	15 23	−1.8	1056	2.6	1012	2.3	O 65.0
2 30	+2.2	107	3.4	94	3.6	W 67.8	15 41	−2.4	1051	1.2	1098	3.0	O 59.9
2 50	−4.6	107	3.4	133	2.0	W 64.7	15 57	+4.8	959	3.4	904	3.9	W 35.2
2 58	−1.0	288	1.0	239	4.1	O 63.0	16 14	−1.8	936	2.7	987	2.2	W 61.8
3 15	−3.0	319	3.3	270	3.7	O 44.3	16 32	−3.6	1100	3.1	1073	2.3	O 53.8
3 35	−3.8	320	3.2	362	3.0	O 57.6	16 52	+3.2	1100	3.1	1158	3.0	O 54.8
3 53	+2.8	379	2.9	329	1.0	O 43.6	17 4	+2.0	1237	4.9	1193	1.0	O 49.0
4 8	+6.0	388	2.7	411	2.9	O 47.2	17 17	−2.8	1220	3.2	1175	1.9	O 51.6
4 25	+3.0	202	3.6	178	3.6	W 53.8	17 32	+1.2	1051	1.2	998	3.4	W 57.4
4 29	+2.8	368	2.4	319	3.3	O 50.6	17 49	+0.8	1125	3.5	1084	3.2	W 72.2
4 48	+4.0	434	1.0	431	3.1	O 56.4	18 4	−1.8	1069	3.3	1012	2.3	W 48.1
5 5	+3.4	411	2.9	388	2.7	O 53.7	18 23	+3.4	1137	3.3	1182	2.8	W 62.5
5 29	−3.6	275	3.3	319	3.3	W 49.8	18 40	−3.2	1098	3.0	1092	2.4	W 58.7
5 44	+3.4	460	1.9	440	3.4	O 55.6	18 56	+1.2	1321	3.1	1259	3.0	O 63.9
6 2	−1.8	495	3.4	451	1.5	O 57.5	19 10	−2.8	1193	1.0	1158	3.0	W 52.3
6 21	−2.0	495	3.4	460	1.9	O 60.5	19 27	−7.4	1151	2.3	1121	1.9	W 36.8
6 38	−4.0	460	1.9	496	1.1	O 61.0	19 44	+0.8	1182	2.8	1134	2.8	W 56.2
6 50	−4.8	451	1.5	484	1.8	O 59.2	20 1	+1.6	1428	2.8	1389	3.1	O 59.0
7 10	+5.8	576	3.3	606	3.6	O 39.0	20 8	−0.8	1227	3.2	1297	3.6	W 71.8
7 30	+1.6	411	2.9	362	3.0	W 53.5	20 28	+2.6	1299	4.6	1259	3.0	W 59.1
7 48	+6.0	502	3.4	496	1.1	W 63.4	20 39	−1.4	1196	4.7	1259	3.0	W 57.8
8 6	−5.4	414	2.0	431	3.1	W 56.8	21 5	+6.6	1539	3.9	1510	3.5	O 24.4
8 18	−1.4	484	1.8	434	1.0	W 57.9	21 20	−6.8	1488	3.8	1451	1.8	O 40.0
8 35	+1.6	460	1.9	427	2.0	W 54.3	21 39	−2.6	1525	2.4	1514	3.2	O 66.0
8 52	−1.6	434	1.0	484	1.8	W 52.8	21 58	+1.0	1403	3.8	1344	3.5	W 63.5
9 9	−3.6	520	4.6	483	3.0	W 38.2	22 5	+6.0	1374	4.8	1357	2.4	W 51.6
9 24	+4.4	647	3.4	696	4.9	O 47.4	22 20	−2.8	10	2.7	1596	4.5	O 60.4
9 43	−3.8	690	3.2	713	3.3	O 66.5	22 39	−3.6	3	2.1	1581	4.4	O 56.7
10 8	−1.2	744	2.1	710	4.3	O 63.0	22 55	−2.4	1403	3.8	1457	4.3	W 56.1
10 24	−1.6	713	3.3	690	3.2	O 72.3	23 15	+1.0	85	3.4	36	3.2	O 57.2
10 39	+1.8	641	3.4	690	3.2	W 72.3	23 27	−1.6	1398	4.3	1457	4.3	W 52.7
10 58	−1.2	599	2.0	648	3.4	W 64.2	23 46	−1.0	1523	2.4	1466	4.2	W 62.0
11 17	+5.6	748	2.3	800	2.3	O 37.4							
11 29	+1.6	664	4.2	623	3.0	W 53.8							
11 46	−2.6	838	3.1	872	2.8	O 57.2							
12 6	−6.4	854	4.9	839	2.9	O 49.4							

Frühlings-punkts-Orts-Zeit		Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h	m	m					°
0	11	+ 1.8	1581	4.4	1523	2.4	W 58.2
0	31	− 3.0	1523	2.4	1514	3.2	W 56.6
0	43	+ 3.0	1523	2.4	1581	4.4	W 54.7
1	3	− 5.2	190	3.0	144	3.5	O 34.0
1	18	+ 1.2	39	2.2	10	2.7	W 66.7
1	32	− 2.2	238	3.0	202	3.6	O 52.0
1	57	+ 1.0	221	3.5	178	3.6	O 63.9
2	17	− 1.6	239	4.1	288	1.0	O 56.5
2	32	− 3.8	202	3.6	244	2.9	O 56.8
2	51	− 1.4	281	3.5	239	4.1	O 62.0
3	4	+ 3.4	320	3.2	309	2.7	O 51.9
3	21	+ 3.0	368	2.4	329	1.0	O 41.5
3	39	+ 1.6	354	2.6	309	2.7	O 56.1
3	58	− 5.2	187	2.9	230	3.0	W 44.4
4	14	− 2.0	362	3.0	320	3.2	O 63.2
4	32	− 4.4	211	1.9	187	2.9	W 40.4
4	51	− 5.6	388	2.7	368	2.4	O 52.3
5	11	− 3.6	275	3.3	319	3.3	W 51.0
5	31	+ 3.2	316	4.8	354	2.6	W 69.5
5	50	− 3.0	451	1.5	496	1.1	O 55.0
6	1	+ 3.4	460	1.9	440	3.4	O 57.2
6	21	− 2.0	496	1.1	451	1.5	O 58.3
6	26	− 5.0	451	1.5	484	1.8	O 58.0
6	45	− 2.2	496	1.1	460	1.9	O 61.2
7	5	+ 3.6	429	3.1	387	1.9	W 44.0
7	17	4.0	569	2.9	525	2.1	O 39.8
7	34	− 5.8	557	3.7	595	3.2	O 51.2
7	39	− 6.0	414	2.0	431	3.1	W 61.4
7	59	+ 2.6	460	1.9	431	3.1	W 58.6
8	19	+ 1.4	523	2.8	471	3.3	W 63.2
8	39	+ 2.6	523	2.8	495	3.4	W 62.0
8	44	− 2.0	434	1.0	484	1.8	W 54.2
9	4	− 2.8	657	3.0	606	3.6	O 47.2
9	24	− 4.0	690	3.2	713	3.3	O 63.0
9	29	− 5.0	483	3.0	520	4.6	W 36.8
9	46	+ 4.6	647	3.4	696	4.9	O 48.8
10	2	− 1.4	744	2.1	710	4.3	O 61.8
10	16	− 1.6	713	3.3	690	3.2	O 71.0
10	29	+ 4.6	800	2.3	766	3.4	O 32.0
10	48	+ 1.6	641	3.4	690	3.2	W 71.5
11	3	− 2.0	786	2.8	821	2.8	O 62.5
11	37	+ 1.8	664	4.2	623	3.0	W 52.6
11	47	− 1.2	821	2.8	786	2.8	O 70.0
12	2	+ 4.4	871	2.6	842	2.2	O 35.2
12	21	− 1.4	872	2.8	838	3.1	O 62.8
12	35	− 6.2	701	2.3	688	2.7	W 32.2
12	50	+ 2.2	953	3.4	912	2.9	O 48.4
13	14	+ 1.2	792	2.6	744	2.1	W 62.4
13	27	− 4.2	912	2.9	883	2.1	O 51.1
13	47	− 1.2	998	3.4	953	3.4	O 58.8
14	3	+ 2.6	966	3.2	1012	2.3	O 54.7
14	23	+ 1.4	1017	2.6	966	3.2	O 57.4
14	39	− 2.2	987	2.2	953	3.4	O 62.5
14	53	+ 3.6	987	2.2	1017	2.6	O 63.9
15	12	+ 2.0	1105	3.2	1069	3.3	O 49.3
15	29	− 2.4	1051	1.2	1098	3.0	O 58.5
15	47	+ 6.6	987	2.2	1012	2.3	W 65.1
16	5	− 1.8	936	2.7	987	2.2	W 63.2
16	23	+ 2.6	1175	1.9	1131	3.6	O 44.2
16	34	+ 1.0	1148	3.4	1098	3.0	O 66.7
16	49	− 1.2	1226	3.0	1182	2.8	O 55.5
17	3	− 2.6	1220	3.2	1175	1.9	O 50.0
17	14	− 1.6	987	2.2	967	2.5	W 55.2
17	35	− 1.8	1100	3.1	1051	1.2	W 55.2
17	55	− 1.6	1069	3.3	1012	2.3	W 49.6
18	11	− 1.4	1137	3.3	1092	2.4	W 63.5
18	26	− 2.0	1259	3.0	1211	2.1	O 60.6
18	45	− 2.2	1092	2.4	1137	3.3	W 59.2
19	2	+ 1.0	1321	3.1	1259	3.0	O 64.5
19	22	+ 2.4	1389	3.1	1428	2.8	O 52.7
19	42	− 1.8	1349	3.7	1321	3.1	O 71.2
19	58	− 5.8	1231	2.9	1259	3.0	W 62.9
20	11	+ 1.0	1211	2.1	1160	3.6	W 55.2
20	32	− 1.2	1196	4.7	1259	3.0	W 58.9
20	40	+ 0.8	1321	3.1	1282	2.7	W 71.0
20	55	+ 9.8	1510	3.5	1539	3.9	O 23.8
21	8	− 1.2	1259	3.0	1227	3.2	W 55.0
21	26	− 2.6	1525	2.4	1514	3.2	O 63.6
21	44	+ 1.8	1428	2.8	1399	4.2	W 70.8
22	3	+ 1.0	1403	3.8	1344	3.5	W 62.5
22	21	− 3.6	3	2.1	1581	4.4	O 54.2
22	38	+ 1.6	1344	3.5	1403	3.8	W 56.9
22	48	− 1.2	1457	4.3	1398	4.3	W 58.2
23	3	+ 2.6	3	2.1	39	2.2	O 60.0
23	20	+ 1.0	85	3.4	36	3.2	O 58.5
23	33	+ 1.8	39	2.2	3	2.1	O 63.4
23	46	− 1.8	1457	4.3	1428	2.8	W 51.7
23	54	− 1.4	39	2.2	94	3.6	O 66.5

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 1	−5.6	105	4.1	66	3.2	O 38.6
0 20	+2.0	1581	4.4	1523	2.4	W 57.0
0 36	−2.0	1483	4.8	1523	2.4	W 54.7
0 58	+3.2	1523	2.4	1581	4.4	W 52.5
1 8	−1.8	36	3.2	1596	4.5	W 61.4
1 24	+1.4	39	2.2	10	2.7	W 65.8
1 43	−2.6	1596	4.5	36	3.2	W 56.8
2 2	+1.0	221	3.5	178	3.6	O 64.8
2 17	+1.0	235	3.4	178	3.6	O 65.6
2 25	−1.0	71	2.1	15	3.5	W 53.0
2 44	−1.6	281	3.5	239	4.1	O 61.0
2 53	+2.2	107	3.4	94	3.6	W 63.4
3 11	+1.6	127	3.9	94	3.6	W 59.3
3 31	−4.6	195	(2.2)	179	4.4	W 51.7
3 49	+4.2	329	1.0	379	2.9	O 43.6
4 4	−1.8	362	3.0	320	3.2	O 61.9
4 23	−6.2	388	2.7	368	2.4	O 50.0
4 42	+2.2	222	4.3	199	4.3	W 59.4
5 11	+7.8	388	2.7	411	2.9	O 54.5
5 31	−1.0	309	2.7	251	3.0	W 58.6
5 45	+1.4	320	3.2	281	3.5	W 62.4
6 1	−5.6	451	1.5	484	1.8	O 55.5
6 18	+3.6	460	1.9	440	3.4	O 58.6
6 34	−2.2	496	1.1	460	1.9	O 60.1
6 56	+7.4	414	2.0	412	2.9	W 67.0
7 9	+7.2	451	1.5	440	3.4	W 57.9
7 28	−4.0	387	1.9	368	2.4	W 43.2
7 46	+1.4	460	1.9	412	2.9	W 59.1
8 5	−1.4	484	1.8	434	1.0	W 59.6
8 23	+2.4	412	2.9	460	1.9	W 53.8
8 34	−1.8	434	1.0	484	1.8	W 55.8
8 54	+2.0	471	3.3	523	2.8	W 59.5
9 4	−5.6	483	3.0	520	4.6	W 38.9
9 27	−2.4	520	4.6	470	2.5	W 38.1
9 45	−5.6	582	4.9	535	1.7	W 25.0
9 55	−1.2	744	2.1	710	4.3	O 60.5
10 12	−7.0	535	1.7	582	4.9	W 24.0
10 31	−4.8	604	3.1	585	2.1	W 39.1
10 46	−1.4	599	2.0	648	3.4	W 66.3
10 56	+1.8	641	3.4	690	3.2	W 70.7
11 38	+1.4	859	5.3	830	4.2	O 58.4
11 41	−1.0	821	2.8	786	2.8	O 69.3
11 46	+1.8	664	4.2	623	3.0	W 51.0
12 4	−7.2	701	2.3	688	2.7	W 34.4
12 24	+4.8	871	2.6	842	2.2	O 36.8
12 43	+2.0	936	2.7	910	3.7	O 54.3
13 1	+2.4	953	3.4	912	2.9	O 50.0
13 20	+1.2	792	2.6	744	2.1	W 61.4
13 25	−7.6	882	3.4	910	3.7	O 59.4
13 41	−1.4	998	3.4	953	3.4	O 57.6
13 59	−7.0	816	1.7	800	2.3	W 34.7
14 16	+2.6	966	3.2	1012	2.3	O 56.6
14 35	+3.0	1073	2.3	1036	3.6	O 42.0
14 41	−5.2	1017	2.6	1056	2.6	O 60.2
15 5	−2.0	1056	2.6	1012	2.3	O 62.8
15 22	+2.2	1105	3.2	1069	3.3	O 50.6
15 40	−2.6	912	2.9	882	3.4	W 50.6
15 56	−4.0	1100	3.1	1073	2.3	O 51.8
16 12	+1.6	1098	3.0	1148	3.4	O 63.9
16 20	+7.6	987	2.2	1012	2.3	W 63.1
16 39	+1.0	1148	3.4	1098	3.0	O 67.3
16 52	−1.8	966	3.2	936	2.7	W 51.4
17 7	+3.4	1231	2.9	1220	3.2	O 52.4
17 26	−1.8	1100	3.1	1051	1.2	W 56.0
17 45	+1.4	1051	1.2	998	3.4	W 54.8
18 4	−1.4	1137	3.3	1092	2.4	W 64.8
18 16	−2.0	1259	3.0	1211	2.1	O 59.7
18 34	−2.4	1092	2.4	1137	3.3	W 61.1
18 53	−5.4	1289	4.1	1352	1.3	O 43.0
19 7	+1.2	1321	3.1	1259	3.0	O 65.2
19 20	−3.2	1352	1.3	1289	4.1	O 44.6
19 34	+2.6	1389	3.1	1428	2.8	O 55.1
19 58	−0.8	1259	3.0	1196	4.7	W 64.2
20 17	+1.8	1428	2.8	1389	3.1	O 61.4
20 34	+4.2	1500	2.0	1459	3.4	O 32.8
20 54	+2.6	1299	4.6	1259	3.0	W 55.9
21 13	−2.6	1525	2.4	1514	3.2	O 61.0
21 29	+2.6	1520	3.5	1581	4.4	O 46.4
21 44	−2.4	1265	4.6	1325	2.3	W 47.1
22 0	+2.0	1581	4.4	1520	3.5	O 49.8
22 8	+1.2	1403	3.8	1344	3.5	W 61.6
22 30	−2.6	1403	3.8	1457	4.3	W 59.2
22 42	−1.4	1457	4.3	1398	4.3	W 59.1
22 51	−3.0	1389	3.1	1378	4.2	W 53.9
23 10	−1.8	1398	4.3	1457	4.3	W 55.6
23 29	+5.0	66	3.2	37	(2.2)	O 35.8
23 47	−1.4	39	2.2	94	3.6	O 65.0

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 0	−7.8	71	2.1	58	4.1	O 55.0	12 39	+1.0	786	2.8	744	2.1	W 70.2
0 7	−1.0	94	3.6	39	2.2	O 67.3	12 53	+2.4	936	2.7	910	3.7	O 56.1
0 26	−2.0	1483	4.8	1523	2.4	W 56.7	13 13	+2.2	953	3.4	912	2.9	O 51.6
0 31	+1.4	174	4.0	134	3.0	O 53.4	13 26	+1.0	792	2.6	744	2.1	W 60.1
0 59	−1.6	36	3.2	1596	4.5	W 62.4	13 35	−2.8	910	3.7	882	3.4	O 59.9
1 21	−4.6	37	(2.2)	5	3.8	W 36.7	13 48	−1.8	818	2.8	762	3.0	W 52.4
1 39	+1.6	178	3.6	221	3.5	O 61.8	13 59	−1.0	827	4.3	872	2.8	W 73.8
1 58	−6.4	5	3.8	37	(2.2)	W 34.2	14 17	−2.4	987	2.2	953	3.4	O 60.4
2 7	+1.2	221	3.5	178	3.6	O 65.6	14 37	+1.6	1017	2.6	966	3.2	O 59.2
2 22	+0.8	235	3.4	178	3.6	O 66.3	14 55	−1.8	1056	2.6	1012	2.3	O 61.4
2 41	−1.2	288	1.0	239	4.1	O 60.1	15 15	−5.4	984	2.9	1036	3.6	O 45.6
2 59	+1.2	292	3.9	244	2.9	O 60.2	15 33	+2.0	1105	3.2	1069	3.3	O 52.1
3 19	+1.6	127	3.9	94	3.6	W 57.9	15 50	+1.4	953	3.4	893	1.0	W 59.0
3 39	+3.8	320	3.2	309	2.7	O 57.0	16 9	−2.4	1088	3.6	1051	1.2	O 60.2
3 55	+1.6	354	2.6	309	2.7	O 58.5	16 28	−3.2	979	3.2	920	2.4	W 32.8
4 15	−3.0	244	2.9	222	4.3	W 61.4	16 43	−1.8	966	3.2	936	2.7	W 53.2
4 34	+1.4	434	1.0	388	2.7	O 52.9	17 2	+1.6	1039	3.5	1092	2.4	W 70.8
4 53	+2.2	222	4.3	199	4.3	W 57.4	17 11	+1.0	1196	4.7	1137	3.3	O 65.2
5 13	−6.4	222	4.3	244	2.9	W 54.2	17 24	+3.8	1231	2.9	1220	3.2	O 55.2
5 27	−1.8	354	2.6	412	2.9	O 68.7	17 44	+2.2	1193	1.0	1265	4.6	O 53.0
5 43	−3.2	440	3.4	411	2.9	O 56.0	18 2	+2.8	1118	1.7	1069	3.3	W 48.6
6 2	−2.0	496	1.1	451	1.5	O 56.0	18 22	−2.4	1092	2.4	1137	3.3	W 63.0
6 20	−2.8	484	1.8	451	1.5	O 57.0	18 42	+2.0	1182	2.8	1137	3.3	W 60.6
6 40	+2.4	368	2.4	309	2.7	W 49.5	18 57	−7.8	1231	2.9	1259	3.0	O 65.2
6 54	−3.2	484	1.8	460	1.9	O 60.1	19 13	+3.8	1137	3.3	1182	2.8	W 57.6
7 8	−4.2	387	1.9	368	2.4	W 45.4	19 25	−1.8	1349	3.7	1321	3.1	O 69.0
7 38	+9.2	594	2.2	582	4.9	O 24.7	19 47	+2.8	1389	3.1	1428	2.8	O 57.4
7 58	−1.4	484	1.8	434	1.0	W 60.5	19 55	−0.8	1227	3.2	1297	3.6	W 74.2
8 3	−2.0	440	3.4	414	2.0	W 54.8	20 19	−1.4	1196	4.7	1259	3.0	W 61.5
8 21	+4.4	604	3.1	645	3.9	O 39.4	20 26	+1.6	1428	2.8	1389	3.1	O 62.5
8 36	−3.0	657	3.0	606	3.6	O 45.4	20 49	+1.0	1321	3.1	1282	2.7	W 69.7
8 50	+4.0	626	3.8	688	2.7	O 33.0	21 7	+2.6	1299	4.6	1259	3.0	W 54.3
9 9	+3.2	688	2.7	626	3.8	O 33.8	21 32	−2.4	1265	4.6	1325	2.3	W 49.0
9 19	+2.8	731	3.6	708	3.0	O 43.6	21 42	+2.8	1520	3.5	1581	4.4	O 48.1
9 49	−1.4	744	2.1	710	4.3	O 59.4	22 2	+1.8	1428	2.8	1399	4.2	W 69.3
10 7	−5.2	604	3.1	585	2.1	W 40.7	22 17	−2.6	1403	3.8	1457	4.3	W 60.2
10 21	−1.0	648	3.4	599	2.0	W 69.5	22 36	−3.4	1389	3.1	1378	4.2	W 56.5
10 39	−1.2	599	2.0	648	3.4	W 67.7	22 55	+1.4	36	3.2	85	3.4	O 54.4
10 53	−8.2	585	2.1	604	3.1	W 37.6	23 4	+3.6	37	(2.2)	91	3.2	O 34.4
11 5	+1.6	641	3.4	690	3.2	W 69.5	23 20	+1.0	116	3.5	55	3.9	O 50.7
11 17	+5.4	800	2.3	766	3.4	O 35.2	23 40	−1.6	39	2.2	94	3.6	O 63.6
11 36	−1.0	821	2.8	786	2.8	O 68.2	23 54	+5.4	66	3.2	37	(2.2)	O 37.2
11 51	+1.4	795	5.1	827	4.3	O 71.8							
12 8	−2.2	708	3.0	664	4.2	W 46.1							
12 19	+8.2	842	2.2	871	2.6	O 36.6							

Frühlingspunkts-Orts-Zeit h	m	Diff. d. Fp. O. Zt. für +0.1° in Breite m	1. Stern Nr.	Gr.	2. Stern Nr.	Gr.	Höhe °
0	2	-1.0	94	3.6	39	2.2	O 66.5
0	16	-2.2	1483	4.8	1523	2.4	W 58.7
0	38	+1.6	174	4.0	134	3.0	O 54.8
0	51	-1.8	36	3.2	1596	4.5	W 63.2
1	4	-7.0	107	3.4	133	2.0	O 67.8
1	17	-2.8	1596	4.5	36	3.2	W 60.8
1	26	-7.2	5	3.8	37	(2.2)	W 36.6
1	38	+1.4	39	2.2	10	2.7	W 63.2
1	57	+3.4	230	3.0	275	3.3	O 41.6
2	15	1.0	71	2.1	15	3.5	W 55.1
2	35	-1.2	288	1.0	239	4.1	O 59.1
2	37	+1.8	244	2.9	292	3.9	O 57.8
3	5	+1.4	292	3.9	244	2.9	O 61.2
3	23	+4.8	329	1.0	368	2.4	O 42.1
3	39	+2.6	178	3.6	222	4.3	W 63.6
3	58	+4.0	320	3.2	309	2.7	O 59.3
4	13	-4.4	275	3.3	319	3.3	O 51.9
4	32	+4.6	329	1.0	379	2.9	O 47.3
4	49	+4.4	383	3.8	429	3.1	O 38.2
4	57	+5.4	270	3.7	230	3.0	W 42.3
5	12	-1.2	434	1.0	479	2.9	O 59.8
5	27	-1.8	495	3.4	451	1.5	O 52.1
5	44	+1.6	354	2.6	316	4.8	W 67.8
6	0	+1.4	320	3.2	281	3.5	W 60.1
6	16	-4.6	319	3.3	379	2.9	W 49.2
6	32	-1.6	556	3.9	523	2.8	O 55.7
6	52	+2.4	368	2.4	309	2.7	W 47.9
7	27	-3.2	595	3.2	557	3.7	O 50.3
7	51	-1.2	484	1.8	434	1.0	W 61.4
8	1	+1.4	460	1.9	412	2.9	W 56.7
8	21	-3.0	657	3.0	606	3.6	O 44.0
8	39	+3.0	523	2.8	496	1.1	W 60.6
8	43	+4.4	604	3.1	645	3.9	O 41.0
9	3	-2.4	520	4.6	470	2.5	W 40.5
9	17	+2.8	523	2.8	495	3.4	W 56.8
9	33	+3.0	731	3.6	708	3.0	O 45.3
9	53	-1.6	713	3.3	690	3.2	O 67.8
10	33	-1.4	599	2.0	648	3.4	W 68.8
10	53	+1.0	690	3.2	641	3.4	W 70.2
11	13	+1.8	641	3.4	690	3.2	W 68.3
11	31	-1.2	821	2.8	786	2.8	O 67.3
11	57	-2.2	708	3.0	664	4.2	W 47.4
12	2	-3.4	792	2.6	830	4.2	O 62.1
12	26	-4.2	718	3.4	710	4.3	W 56.0
12	44	+1.2	786	2.8	744	2.1	W 69.5
12	56	+4.6	800	2.3	748	2.3	W 37.4
13	14	+1.8	744	2.1	786	2.8	W 65.4
13	31	+1.2	792	2.6	744	2.1	W 59.1
13	39	-1.4	818	2.8	762	3.0	W 53.6
13	54	-1.0	827	4.3	872	2.8	W 74.8
14	11	-2.2	762	3.0	818	2.8	W 49.8
14	26	-2.4	818	2.8	792	2.6	W 49.2
14	46	-2.0	1056	2.6	1012	2.3	O 60.0
15	4	-3.2	866	1.8	839	2.9	W 41.2
15	20	-5.8	1051	1.2	1088	3.6	O 56.0
15	36	-1.8	936	2.7	987	2.2	W 66.8
15	52	+4.4	987	2.2	1017	2.6	W 66.3
16	12	-3.2	979	3.2	920	2.4	W 33.9
16	21	+2.6	1012	2.3	987	2.2	W 62.8
16	39	-4.0	920	2.4	979	3.2	W 32.2
16	58	+2.0	1231	2.9	1193	1.0	O 50.2
17	15	+3.4	1211	2.1	1193	1.0	O 51.8
17	34	+3.6	1105	3.2	1088	3.6	W 60.6
17	43	+3.8	1231	2.9	1220	3.2	O 58.0
17	59	-2.4	1092	2.4	1137	3.3	W 65.9
18	16	+2.8	1118	1.7	1069	3.3	W 47.4
18	28	-1.6	1088	3.6	1063	2.6	W 55.5
18	48	-3.4	1352	1.3	1289	4.1	O 42.4
19	5	+1.8	1259	3.0	1321	3.1	O 65.6
19	21	+1.6	1158	3.0	1098	3.0	W 50.4
19	37	+2.8	1451	1.8	1397	2.5	O 29.5
19	51	-1.0	1227	3.2	1297	3.6	W 75.0
20	10	-3.4	1193	1.0	1182	2.8	W 49.0
20	34	+1.8	1428	2.8	1389	3.1	O 63.5
20	54	+0.8	1321	3.1	1282	2.7	W 68.8
21	13	+2.8	1514	3.2	1501	2.9	O 58.7
21	23	+1.2	1483	4.8	1435	5.2	O 68.4
21	43	+1.8	1282	2.7	1321	3.1	W 59.3
21	56	+2.8	1520	3.5	1581	4.4	O 49.8
22	11	+1.8	1428	2.8	1399	4.2	W 68.3
22	28	-1.4	1457	4.3	1398	4.3	W 60.6
22	45	-3.0	1397	2.5	1341	3.0	W 29.5
23	3	+4.0	39	2.2	36	3.2	O 57.4
23	22	+4.0	37	(2.2)	91	3.2	O 36.0
23	36	+1.0	85	3.4	36	3.2	O 61.5
23	45	-3.2	1523	2.4	1514	3.2	W 63.9

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 2	+3.2	91	3.2	37	(2.2)	O 38.2
0 15	−5.4	1520	3.5	1516	1.2	W 48.9
0 46	+1.4	174	4.0	134	3.0	O 56.0
1 3	−2.8	1596	4.5	36	3.2	W 62.6
1 21	−2.2	133	2.0	107	3.4	O 69.0
1 41	−3.0	4	2.2	1563	4.9	W 32.7
1 55	+1.6	178	3.6	221	3.5	O 64.7
2 13	−2.2	71	2.1	39	2.2	W 55.6
2 29	−4.0	230	3.0	187	2.9	O 44.7
2 49	−4.6	86	2.7	66	3.2	W 32.2
3 2	−2.2	99	3.6	58	4.1	W 42.3
3 20	−3.8	134	3.0	127	3.9	W 55.3
3 47	+5.4	329	1.0	368	2.4	O 44.9
4 7	+2.0	414	2.0	388	2.7	O 50.5
4 25	+3.6	368	2.4	329	1.0	O 48.0
4 46	+4.0	354	2.6	343	1.8	O 65.2
5 6	−1.4	434	1.0	479	2.9	O 58.4
5 15	−1.2	309	2.7	251	3.0	W 60.9
5 30	−2.2	495	3.4	460	1.9	O 53.2
5 48	−0.8	479	2.9	434	1.0	O 66.2
6 8	+2.8	379	2.9	319	3.3	W 49.3
6 22	−3.6	484	1.8	460	1.9	O 58.3
6 39	+5.2	319	3.3	379	2.9	W 47.2
6 43	+6.2	434	1.0	431	3.1	W 69.0
7 10	−9.6	343	1.8	354	2.6	W 54.6
7 19	−8.4	368	2.4	387	1.9	W 44.5
7 31	−1.8	388	2.7	354	2.6	W 50.4
7 45	−1.4	484	1.8	434	1.0	W 62.1
8 2	+4.2	502	3.4	484	1.8	W 60.6
8 11	−3.8	647	3.4	606	3.6	O 42.9
8 46	+1.4	523	2.8	471	3.3	W 59.7
8 54	+3.0	523	2.8	496	1.1	W 59.1
9 20	−3.2	470	2.5	520	4.6	W 39.2
9 44	+5.4	606	3.6	576	3.3	W 56.5
9 55	−2.2	533	4.4	502	3.4	W 45.5
10 26	−1.2	599	2.0	648	3.4	W 69.8
10 39	−3.4	576	3.3	557	3.7	W 41.8
10 58	+1.0	690	3.2	641	3.4	W 69.5
11 18	+2.6	838	3.1	818	2.8	O 50.6
11 32	+7.4	647	3.4	696	4.9	W 47.4
11 51	−1.6	872	2.8	838	3.1	O 57.6
12 10	−1.8	830	4.2	792	2.6	O 62.5
12 21	−1.8	718	3.4	690	3.2	W 56.9
12 50	+1.0	786	2.8	744	2.1	W 68.7
13 6	−3.2	910	3.7	882	3.4	O 57.5
13 19	+5.4	800	2.3	748	2.3	W 36.2
13 37	+1.2	792	2.6	744	2.1	W 58.2
13 54	−2.4	987	2.2	953	3.4	O 57.9
14 14	−2.4	818	2.8	792	2.6	W 51.0
14 33	+2.2	966	3.2	1017	2.6	O 59.3
14 52	+1.6	1017	2.6	966	3.2	O 60.8
15 7	+2.8	1092	2.4	1088	3.6	O 54.7
15 23	−1.6	1098	3.0	1051	1.2	O 57.0
15 40	−4.2	882	3.4	912	2.9	W 51.1
16 0	+1.6	1182	2.8	1131	3.6	O 44.4
16 19	−4.4	920	2.4	979	3.2	W 33.8
16 34	+2.8	1012	2.3	987	2.2	W 61.4
16 48	+7.8	1073	2.3	1062	4.1	W 51.3
17 8	+2.0	1231	2.9	1193	1.0	O 51.6
17 22	−1.8	1069	3.3	1012	2.3	W 54.0
17 40	−3.4	1069	3.3	1051	1.2	W 52.9
18 0	−5.8	1050	2.7	1032	4.2	W 30.0
18 20	−1.6	1088	3.6	1063	2.6	W 57.0
18 39	−2.8	1259	3.0	1231	2.9	O 64.0
18 57	−2.2	1119	2.7	1073	2.3	W 38.8
19 17	−3.2	1151	2.3	1118	1.7	W 40.0
19 32	−3.8	1146	3.6	1121	1.9	W 34.1
19 51	+3.2	1451	1.8	1397	2.5	O 30.6
20 6	−1.4	1196	4.7	1259	3.0	W 63.9
20 15	+2.8	1389	3.1	1428	2.8	O 61.5
20 38	−1.8	1283	2.8	1211	2.1	W 47.9
20 58	+1.0	1321	3.1	1282	2.7	W 67.8
21 17	+8.4	1459	3.4	1500	2.0	O 35.9
21 27	+3.0	1514	3.2	1501	2.9	O 60.8
21 43	−2.0	1352	1.3	1299	4.6	W 47.0
22 2	−3.4	1389	3.1	1378	4.2	W 61.6
22 21	−1.4	1457	4.3	1398	4.3	W 61.5
22 37	−1.6	1389	3.1	1366	4.8	W 57.1
22 42	−2.0	1398	4.3	1457	4.3	W 59.8
23 9	−9.2	1459	3.4	1451	1.8	W 35.4
23 25	−1.6	39	2.2	94	3.6	O 60.4
23 42	+4.0	37	(2.2)	91	3.2	O 37.4

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 2	+4.6	37	(2.2)	91	3.2	O 38.6
0 23	+2.4	1546	4.5	1596	4.5	W 65.8
0 49	−3.0	1596	4.5	36	3.2	W 63.9
0 59	+2.0	1581	4.4	1523	2.4	W 51.9
1 10	−2.2	133	2.0	107	3.4	O 68.0
1 26	−3.2	4	2.2	1563	4.9	W 34.0
1 44	−8.4	195	(2.2)	179	4.4	O 50.4
2 4	−1.0	71	2.1	15	3.5	W 57.0
2 24	−8.2	211	1.9	187	2.9	O 44.0
2 26	−5.6	86	2.7	66	3.2	W 33.8
2 51	−2.2	99	3.6	58	4.1	W 43.6
3 1	−4.0	134	3.0	127	3.9	W 57.6
3 18	+1.4	292	3.9	244	2.9	O 63.0
3 27	−5.4	275	3.3	319	3.3	O 49.4
3 41	+1.6	222	4.3	178	3.6	W 63.0
4 0	−3.6	343	1.8	320	3.2	O 59.7
4 20	+1.8	354	2.6	309	2.7	O 61.5
4 36	+3.0	411	2.9	387	1.9	O 47.5
4 56	−1.2	234	3.9	174	4.0	W 49.0
5 16	−1.2	412	2.9	354	2.6	O 67.0
5 32	−2.0	496	1.1	451	1.5	O 51.8
5 49	−2.6	431	3.1	414	2.0	O 66.5
6 4	−4.0	484	1.8	460	1.9	O 56.5
6 22	+3.0	379	2.9	319	3.3	W 48.4
6 30	+2.0	461	5.0	523	2.8	O 54.6
6 46	+1.6	523	2.8	461	5.0	O 55.4
7 6	−5.6	520	4.6	483	3.0	O 41.8
7 24	−1.0	388	2.7	330	1.0	W 51.5
7 38	−1.4	484	1.8	434	1.0	W 63.0
7 57	−2.0	434	1.0	484	1.8	W 61.4
8 16	+1.6	460	1.9	412	2.9	W 54.4
8 36	−9.6	604	3.1	585	2.1	O 41.8
8 53	+1.4	523	2.8	471	3.3	W 58.8
9 9	+3.2	523	2.8	496	1.1	W 56.9
9 28	−1.2	744	2.1	710	4.3	O 55.2
9 44	−2.0	533	4.4	502	3.4	W 47.0
10 4	+3.4	731	3.6	708	3.0	O 48.5
10 22	−3.6	576	3.3	557	3.7	W 43.8
10 48	−2.0	604	3.1	557	3.7	W 40.0
11 3	+1.0	690	3.2	641	3.4	W 68.7
11 21	+3.6	696	4.9	647	3.4	W 47.9
11 36	−6.6	842	2.2	800	2.3	O 35.4
11 43	−1.6	872	2.8	838	3.1	O 55.9
12 1	−2.0	830	4.2	792	2.6	O 61.8
12 17	+4.0	883	2.1	866	1.8	O 42.4

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
12 41	+2.2	731	3.6	685	5.3	W 49.8
12 50	−3.4	910	3.7	882	3.4	O 55.4
12 55	+1.0	786	2.8	744	2.1	W 67.5
13 14	+3.8	912	2.9	953	3.4	O 52.3
13 32	+1.8	744	2.1	786	2.8	W 61.5
13 49	−2.4	762	3.0	818	2.8	W 53.1
14 2	−2.6	818	2.8	792	2.6	W 52.7
14 17	+9.4	871	2.6	842	2.2	W 37.9
14 36	−3.8	1036	3.6	984	2.9	O 43.1
14 50	−2.2	1056	2.6	1017	2.6	O 61.4
15 10	−4.6	839	2.9	866	1.8	W 40.8
15 30	+2.6	953	3.4	910	3.7	W 59.2
15 49	−3.0	1137	3.3	1105	3.2	O 54.7
16 8	+1.8	1182	2.8	1131	3.6	O 45.4
16 16	−1.8	966	3.2	936	2.7	W 57.8
16 38	+5.6	987	2.2	1017	2.6	W 62.9
16 48	−4.8	1098	3.0	1092	2.4	O 69.2
17 13	−1.6	1069	3.3	1012	2.3	W 55.1
17 23	−3.8	1069	3.3	1051	1.2	W 54.5
17 42	−1.8	1069	3.3	1017	2.6	W 53.2
17 58	−2.6	1220	3.2	1182	2.8	O 59.3
18 16	−3.0	1094	3.0	1032	4.2	W 28.0
18 33	+4.2	1100	3.1	1158	3.0	W 53.0
18 47	−7.4	1100	3.1	1105	3.2	W 51.2
19 2	−3.8	1299	4.6	1357	2.4	O 54.6
19 22	+1.0	1407	2.9	1357	2.4	O 56.8
19 40	+3.8	1397	2.5	1451	1.8	O 30.2
19 59	−1.4	1196	4.7	1259	3.0	W 65.1
20 7	+3.2	1451	1.8	1397	2.5	O 31.8
20 29	+3.0	1389	3.1	1428	2.8	O 63.4
20 37	−1.2	1259	3.0	1227	3.2	W 61.6
20 56	−2.2	1211	2.1	1283	2.8	W 46.0
21 15	−2.0	1283	2.8	1237	4.9	W 45.3
21 33	−2.2	1352	1.3	1299	4.6	W 48.3
21 50	−2.0	1357	2.4	1321	3.1	W 57.2
22 5	−2.8	1299	4.6	1352	1.3	W 44.9
22 25	+3.0	1520	3.5	1581	4.4	O 52.4
22 40	−3.8	1341	3.0	1397	2.5	W 30.2
22 57	−2.2	1457	4.3	1428	2.8	W 59.9
23 17	−1.6	39	2.2	94	3.6	O 59.1
23 35	+1.2	116	3.5	55	3.9	O 53.8
23 52	−1.0	94	3.6	39	2.2	O 64.7

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 10	+ 1.4	1596	4.5	1546	4.5	W 66.7	12 49	- 2.6	690	3.2	718	3.4	W 52.8
0 22	+ 2.0	134	3.0	174	4.0	O 52.6	13 0	+ 1.0	786	2.8	744	2.1	W 66.6
0 35	+ 2.4	1546	4.5	1596	4.5	W 64.0	13 14	- 1.6	818	2.8	762	3.0	W 56.2
0 59	- 2.4	133	2.0	107	3.4	O 66.8	13 33	+ 4.2	912	2.9	953	3.4	O 54.6
1 9	- 1.8	1568	4.1	1531	3.7	W 47.2	13 49	+ 1.2	792	2.6	744	2.1	W 55.6
1 24	+ 9.4	187	2.9	190	3.0	O 39.2	14 2	- 6.6	966	3.2	953	3.4	O 57.6
1 44	+ 3.0	214	4.4	270	3.7	O 32.8	14 17	- 4.2	1036	3.6	984	2.9	O 41.5
1 59	+ 1.6	39	2.2	10	2.7	W 58.9	14 39	- 2.2	1056	2.6	1017	2.6	O 59.4
2 18	- 1.2	288	1.0	239	4.1	O 55.7	14 55	+ 2.2	966	3.2	1017	2.6	O 61.5
2 37	- 9.2	66	3.2	86	2.7	W 33.2	15 11	+ 1.4	936	2.7	893	1.0	W 67.8
2 56	+ 4.8	131	2.1	179	4.4	W 51.3	15 18	- 2.8	1088	3.6	1051	1.2	O 55.4
3 10	- 3.4	244	2.9	222	4.3	O 62.5	15 36	+ 3.2	1092	2.4	1088	3.6	O 59.4
3 25	+ 1.2	292	3.9	244	2.9	O 63.6	15 54	+ 3.0	893	1.0	936	2.7	W 61.1
3 42	- 4.0	343	1.8	320	3.2	O 57.4	16 11	+ 3.0	1175	1.9	1151	2.3	O 40.2
4 0	- 8.2	190	3.0	187	2.9	W 40.8	16 24	+ 2.2	1175	1.9	1119	2.7	O 41.8
4 18	+ 1.6	373	2.1	343	1.8	O 63.9	16 46	+ 2.8	1193	1.0	1231	2.9	O 48.7
4 32	+ 1.8	388	2.7	434	1.0	O 53.2	17 5	- 1.8	1069	3.3	1012	2.3	W 55.8
4 51	+ 3.2	411	2.9	387	1.9	O 49.0	17 25	+ 9.8	1193	1.0	1211	2.1	O 53.2
5 10	- 1.2	412	2.9	354	2.6	O 66.7	17 45	- 2.6	1220	3.2	1182	2.8	O 58.4
5 23	- 3.0	484	1.8	451	1.5	O 50.4	18 4	- 1.6	1088	3.6	1063	2.6	W 60.0
5 40	- 0.8	479	2.9	434	1.0	O 64.7	18 22	+ 2.4	1158	3.0	1100	3.1	W 53.7
5 54	+ 8.2	329	1.0	379	2.9	W 48.4	18 34	- 2.2	1119	2.7	1073	2.3	W 41.2
6 10	+ 1.6	354	2.6	316	4.8	W 64.5	18 54	+ 4.4	1100	3.1	1158	3.0	W 50.9
6 22	+ 1.6	320	3.2	281	3.5	W 55.8	19 15	- 4.2	1193	1.0	1182	2.8	W 55.6
6 37	+ 3.0	379	2.9	319	3.3	W 47.1	19 34	- 5.8	1121	1.9	1146	3.6	W 34.1
6 44	+ 2.8	585	2.1	537	3.3	O 32.0	19 52	- 1.4	1196	4.7	1259	3.0	W 65.9
7 12	- 2.0	388	2.7	354	2.6	W 53.7	19 59	+ 4.2	1397	2.5	1451	1.8	O 31.6
7 24	- 2.2	440	3.4	414	2.0	W 60.0	20 21	- 1.8	1283	2.8	1211	2.1	W 49.8
7 47	- 2.0	434	1.0	484	1.8	W 62.5	20 31	- 1.4	1259	3.0	1227	3.2	W 63.0
8 4	- 3.2	414	2.0	440	3.4	W 55.2	20 45	- 2.2	1211	2.1	1283	2.8	W 47.6
8 24	+ 1.4	460	1.9	412	2.9	W 52.9	21 5	- 2.2	1283	2.8	1237	4.9	W 46.6
8 47	+ 5.8	484	1.8	523	2.8	W 57.9	21 22	- 2.2	1352	1.3	1299	4.6	W 49.4
9 0	+ 1.4	523	2.8	471	3.3	W 57.5	21 40	- 1.8	1357	2.4	1321	3.1	W 58.8
9 25	+ 3.4	523	2.8	496	1.1	W 54.4	21 58	+ 3.2	1514	3.2	1501	2.9	O 64.7
9 43	- 5.0	537	3.3	525	2.1	W 32.4	22 9	+ 3.8	21	2.3	4	2.2	O 33.1
10 4	- 3.6	576	3.3	557	3.7	W 45.8	22 24	+ 2.2	15	3.5	3	2.1	O 58.6
10 21	+ 3.6	731	3.6	708	3.0	O 49.9	22 42	+ 8.6	1500	2.0	1459	3.4	W 37.1
10 38	- 2.2	604	3.1	557	3.7	W 41.0	22 46	- 2.0	1457	4.3	1428	2.8	W 61.2
10 55	- 3.0	626	3.8	585	2.1	W 34.3	23 9	- 1.6	39	2.2	94	3.6	O 57.2
11 14	- 1.0	821	2.8	786	2.8	O 63.6	23 24	+ 1.6	36	3.2	85	3.4	O 60.1
11 22	- 2.4	708	3.0	664	4.2	W 50.3	23 41	+ 1.0	116	3.5	55	3.9	O 54.6
11 40	+ 1.8	641	3.4	690	3.2	W 63.2	23 52	+ 1.2	116	3.5	71	2.1	O 57.0
11 51	- 2.2	830	4.2	792	2.6	O 60.6							
12 3	- 1.8	718	3.4	690	3.2	W 59.5							
12 33	- 3.6	910	3.7	882	3.4	O 53.1							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 17	+1.4	1596	4.5	1546	4.5	W 65.8
0 32	+2.2	134	3.0	174	4.0	O 54.4
0 49	+3.8	3	2.1	39	2.2	W 65.1
1 8	+1.6	174	4.0	134	3.0	O 59.4
1 22	−4.4	1563	4.9	4	2.2	W 34.8
1 41	−2.4	71	2.1	39	2.2	W 59.7
2 1	+3.0	251	3.0	244	2.9	O 55.7
2 19	−3.2	54	2.0	21	2.3	W 33.2
2 35	+1.4	178	3.6	235	3.4	O 69.2
2 55	+2.8	179	4.4	131	2.1	W 51.2
3 13	+2.0	244	2.9	292	3.9	O 63.0
3 30	+2.8	343	1.8	373	2.1	O 55.7
3 35	−1.4	85	3.4	134	3.0	W 53.2
3 57	+1.8	222	4.3	178	3.6	W 61.4
4 20	+2.6	309	2.7	354	2.6	O 62.1
4 40	−2.0	354	2.6	412	2.9	O 63.2
4 58	−1.0	309	2.7	251	3.0	W 63.0
5 14	−1.4	251	3.0	309	2.7	W 61.8
5 31	+6.6	320	3.2	309	2.7	W 60.5
5 51	+5.4	354	2.6	343	1.8	W 65.5
6 1	−2.8	312	4.1	270	3.7	W 34.3
6 18	+1.8	354	2.6	316	4.8	W 63.2
6 40	+2.4	557	3.7	520	4.6	O 41.8
6 58	+2.8	585	2.1	537	3.3	O 33.2
7 13	−1.2	388	2.7	330	1.0	W 53.8
7 37	−2.0	434	1.0	484	1.8	W 63.5
7 48	−3.4	414	2.0	440	3.4	W 57.5
8 26	−3.2	440	3.4	434	1.0	W 53.8
8 31	−4.0	470	2.5	520	4.6	W 43.4
9 7	+1.4	523	2.8	471	3.3	W 56.3
9 27	−1.6	520	4.6	460	1.9	W 41.0
9 46	−4.2	576	3.3	557	3.7	W 47.1
10 0	+1.6	792	2.6	740	3.8	O 43.4
10 17	−1.6	569	2.9	523	2.8	W 44.0
10 35	−5.8	557	3.7	576	3.3	W 42.5
10 55	−2.6	557	3.7	604	3.1	W 39.7
11 14	+1.0	690	3.2	641	3.4	W 67.0
11 40	−2.0	830	4.2	792	2.6	O 59.4
11 58	+4.4	696	4.9	647	3.4	W 44.7
12 18	+3.2	920	2.4	885	3.4	O 28.8
12 36	−2.8	690	3.2	718	3.4	W 55.2
12 56	+4.8	910	3.7	936	2.7	O 57.0
13 6	−1.8	818	2.8	762	3.0	W 56.9
13 26	−2.4	762	3.0	818	2.8	W 55.6
13 35	−2.6	818	2.8	792	2.6	W 55.7
13 55	+1.2	792	2.6	744	2.1	W 54.5
14 17	+0.8	1030	2.8	966	3.2	O 60.4
14 29	+3.4	975	4.1	1012	2.3	O 56.0
14 47	+1.8	1092	2.4	1069	3.3	O 49.5
15 6	+0.6	1134	2.8	1069	3.3	O 51.7
15 18	+1.4	936	2.7	893	1.0	W 66.7
15 40	−1.8	910	3.7	889	4.2	W 60.0
15 57	−6.6	1098	3.0	1092	2.4	O 64.0
16 11	+2.8	1119	2.7	1175	1.9	O 41.0
16 29	+2.2	1017	2.6	987	2.2	W 63.4
16 44	−2.8	936	2.7	966	3.2	W 53.6
17 0	+3.0	1193	1.0	1231	2.9	O 51.0
17 19	+1.0	1092	2.4	1039	3.5	W 68.2
17 39	+2.4	1231	2.9	1193	1.0	O 55.8
17 57	−2.4	1017	2.6	1069	3.3	W 51.6
18 8	+3.2	1299	4.6	1283	2.8	O 47.0
18 28	−1.2	1100	3.1	1063	2.6	W 54.6
18 38	−1.8	1349	3.7	1321	3.1	O 59.5
18 57	−5.4	1118	1.7	1151	2.3	W 42.0
19 11	+6.0	1231	2.9	1220	3.2	W 62.8
19 21	−5.0	1119	2.7	1118	1.7	W 38.2
19 33	+2.2	1182	2.8	1137	3.3	W 54.0
19 45	−1.4	1196	4.7	1259	3.0	W 67.2
20 5	−1.2	1193	1.0	1148	3.4	W 51.4
20 24	−1.2	1259	3.0	1227	3.2	W 64.2
20 40	+3.8	1451	1.8	1397	2.5	O 33.6
20 54	−2.2	1283	2.8	1237	4.9	W 48.1
21 14	−1.8	1283	2.8	1231	2.9	W 46.3
21 31	−1.8	1357	2.4	1321	3.1	W 60.0
21 43	−6.6	1361	3.5	1341	3.0	W 33.4
22 0	−4.8	1341	3.0	1397	2.5	W 32.8
22 18	−2.8	1321	3.1	1357	2.4	W 53.2
22 36	−2.2	1457	4.3	1428	2.8	W 62.5
22 49	+2.0	1428	2.8	1399	4.2	W 62.1
23 9	−1.2	1457	4.3	1407	2.9	W 59.6
23 23	+1.6	71	2.1	116	3.5	O 52.6
23 42	−1.0	94	3.6	39	2.2	O 63.0
23 58	+1.4	116	3.5	71	2.1	O 58.1

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 2	+ 1.2	85	3.4	36	3.2	O 65.5	12 56	+ 1.2	967	2.5	912	2.9	O 52.8
0 20	+ 1.4	174	4.0	131	2.1	O 49.6	13 14	− 2.6	762	3.0	818	2.8	W 56.6
0 36	− 2.4	133	2.0	107	3.4	O 63.5	13 22	− 2.8	818	2.8	792	2.6	W 56.9
0 50	− 2.0	1568	4.1	1531	3.7	W 50.0	13 35	+ 1.0	1000	3.3	966	3.2	O 56.0
1 8	+ 4.0	3	2.1	39	2.2	W 63.0	13 56	+ 1.0	966	3.2	1030	2.8	O 57.6
1 21	+ 8.4	37	(2.2)	91	3.2	W 39.7	14 4	+ 2.6	936	2.7	910	3.7	O 65.4
1 29	− 2.2	71	2.1	39	2.2	W 60.8	14 21	+ 0.8	1030	2.8	966	3.2	O 61.1
1 48	− 1.0	71	2.1	15	3.5	W 59.7	14 46	+ 3.8	975	4.1	1012	2.3	O 57.8
2 6	− 3.6	39	2.2	71	2.1	W 57.0	14 56	+ 1.8	1092	2.4	1069	3.3	O 51.0
2 17	− 1.4	15	3.5	71	2.1	W 55.7	15 9	+ 0.6	1134	2.8	1069	3.3	O 52.5
2 37	+ 3.0	270	3.7	214	4.4	O 36.5	15 25	+ 1.4	936	2.7	893	1.0	W 65.5
2 56	− 1.2	134	3.0	85	3.4	W 59.4	15 44	+ 5.8	1118	1.7	1119	2.7	O 40.2
3 9	+ 3.0	179	4.4	131	2.1	W 50.1	15 54	+ 3.4	966	3.2	1012	2.3	W 61.0
3 28	− 1.4	85	3.4	134	3.0	W 54.5	16 12	+ 3.0	953	3.4	910	3.7	W 54.0
3 46	− 1.8	134	3.0	116	3.5	W 53.4	16 30	− 3.2	936	2.7	966	3.2	W 55.8
4 6	+ 1.6	222	4.3	178	3.6	W 60.0	16 46	+ 2.4	1175	1.9	1119	2.7	O 43.6
4 15	+ 1.4	434	1.0	387	1.9	O 47.1	17 5	− 2.6	1012	2.3	1069	3.3	W 56.3
4 35	+ 1.6	373	2.1	343	1.8	O 66.4	17 24	+ 1.0	1092	2.4	1039	3.5	W 67.5
4 54	+ 5.8	387	1.9	411	2.9	O 49.6	17 39	− 3.4	1259	3.0	1231	2.9	O 56.7
5 7	− 1.6	251	3.0	309	2.7	W 62.8	17 51	+ 2.2	1231	2.9	1193	1.0	O 56.9
5 24	+ 3.6	411	2.9	387	1.9	O 51.2	18 11	− 2.4	1119	2.7	1073	2.3	W 43.2
5 32	− 0.8	479	2.9	434	1.0	O 62.8	18 30	− 6.8	1118	1.7	1151	2.3	W 44.1
5 47	+ 5.4	368	2.4	329	1.0	W 49.4	18 46	+ 2.6	1158	3.0	1100	3.1	W 51.2
6 12	− 3.4	270	3.7	312	4.1	W 33.8	19 4	+ 1.4	1357	2.4	1407	2.9	O 54.6
6 27	+ 1.8	354	2.6	316	4.8	W 61.8	19 15	+ 1.4	1378	4.2	1325	2.3	O 54.4
6 47	+ 3.4	537	3.3	585	2.1	O 32.6	19 38	+ 1.0	1407	2.9	1357	2.4	O 60.0
7 7	− 1.0	388	2.7	330	1.0	W 55.0	19 44	+ 2.2	1182	2.8	1137	3.3	W 52.3
7 12	+ 3.0	585	2.1	537	3.3	O 34.2	20 3	− 1.8	1283	2.8	1211	2.1	W 51.3
7 31	− 3.6	414	2.0	440	3.4	W 59.6	20 22	− 2.4	1211	2.1	1283	2.8	W 50.3
8 10	− 3.2	440	3.4	434	1.0	W 56.3	20 41	− 5.2	1389	3.1	1378	4.2	O 65.8
8 39	+ 2.6	523	2.8	484	1.8	W 58.2	21 0	− 2.4	1352	1.3	1299	4.6	W 51.2
9 0	− 2.6	537	3.3	483	3.0	W 35.0	21 20	− 2.8	1237	4.9	1283	2.8	W 45.2
9 19	− 1.4	520	4.6	460	1.9	W 42.0	21 40	− 2.4	1361	3.5	1289	4.1	W 34.0
9 38	+ 3.4	702	1.8	746	4.8	O 32.2	22 2	− 2.6	1289	4.1	1361	3.5	W 32.6
9 49	− 2.8	502	3.4	533	4.4	W 46.6	22 13	− 4.8	1523	2.4	1514	3.2	O 66.0
10 9	− 1.6	569	2.9	523	2.8	W 45.1	22 25	− 2.2	1457	4.3	1428	2.8	W 63.2
10 24	− 3.4	626	3.8	585	2.1	W 36.4	22 46	+ 2.2	15	3.5	3	2.1	O 62.8
10 42	− 2.6	557	3.7	604	3.1	W 41.2	23 3	− 1.0	1457	4.3	1407	2.9	W 60.6
11 2	+ 5.2	688	2.7	626	3.8	W 34.4	23 23	+ 4.4	54	2.0	91	3.2	O 33.8
11 19	+ 1.2	690	3.2	641	3.4	W 66.0	23 39	+ 1.6	36	3.2	85	3.4	O 63.0
11 30	− 2.2	830	4.2	792	2.6	O 58.4	23 51	+ 3.6	91	3.2	54	2.0	O 35.5
11 44	− 2.0	718	3.4	690	3.2	W 62.0							
12 2	+ 2.4	883	2.1	842	2.2	O 39.2							
12 21	− 2.4	702	1.8	645	3.9	W 32.2							
12 34	+ 3.2	920	2.4	885	3.4	O 30.0							

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 8	+1.0	85	3.4	36	3.2	O 66.3
0 27	+1.2	174	4.0	131	2.1	O 50.6
0 40	−2.2	1568	4.1	1531	3.7	W 51.4
0 54	+1.8	39	2.2	3	2.1	W 64.2
1 12	+2.6	1546	4.5	1596	4.5	W 57.9
1 28	+4.6	3	2.1	39	2.2	W 60.6
1 48	−4.2	39	2.2	71	2.1	W 59.3
2 5	−2.4	99	3.6	58	4.1	W 48.1
2 16	−4.4	21	2.3	54	2.0	W 33.8
2 35	+1.6	178	3.6	221	3.5	O 70.0
2 52	+3.0	270	3.7	214	4.4	O 37.3
3 11	+1.8	330	1.0	309	2.7	O 56.6
3 30	+1.8	354	2.6	319	3.3	O 51.4
3 37	−1.8	134	3.0	116	3.5	W 55.2
3 56	−4.4	275	3.3	329	1.0	O 48.7
4 14	+1.8	222	4.3	178	3.6	W 59.2
4 33	−1.2	234	3.9	174	4.0	W 52.7
4 52	−3.4	431	3.1	414	2.0	O 58.8
5 0	+2.0	388	2.7	434	1.0	O 57.4
5 22	+1.4	434	1.0	388	2.7	O 59.4
5 33	−3.2	312	4.1	270	3.7	W 36.2
5 55	−3.6	270	3.7	312	4.1	W 35.0
6 14	+7.0	368	2.4	329	1.0	W 48.0
6 22	−1.0	319	3.3	265	4.1	W 51.2
6 41	−2.2	388	2.7	354	2.6	W 58.3
7 2	−1.2	388	2.7	330	1.0	W 55.9
7 13	−3.8	414	2.0	440	3.4	W 61.6
7 27	−3.2	354	2.6	388	2.7	W 51.6
7 47	+2.4	645	3.9	601	3.5	O 31.2
7 54	−3.6	440	3.4	434	1.0	W 58.9
8 47	−2.8	537	3.3	483	3.0	W 35.8
9 5	−3.2	483	3.0	537	3.3	W 35.1
9 21	+1.4	523	2.8	471	3.3	W 53.8
9 35	−3.2	502	3.4	533	4.4	W 48.6
9 55	+3.8	702	1.8	746	4.8	O 33.5
10 7	−3.6	626	3.8	585	2.1	W 37.3
10 27	−4.6	585	2.1	626	3.8	W 36.6
10 29	−2.8	557	3.7	604	3.1	W 42.4
10 58	−1.2	821	2.8	786	2.8	O 60.0
11 6	+2.8	839	2.9	816	1.7	O 37.2
11 25	+1.0	690	3.2	641	3.4	W 65.2
11 34	−2.0	718	3.4	690	3.2	W 63.0
11 49	+5.2	818	2.8	838	3.1	O 55.2
12 9	−2.4	702	1.8	645	3.9	W 33.2
12 24	+3.0	838	3.1	818	2.8	O 57.9
12 38	+2.0	936	2.7	912	2.9	O 51.0
12 50	+3.6	920	2.4	885	3.4	O 31.2
13 2	+1.2	967	2.5	912	2.9	O 53.9
12 16	+1.0	786	2.8	744	2.1	W 63.8
13 39	−5.4	792	2.6	818	2.8	W 55.6
13 48	+7.4	910	3.7	936	2.7	O 64.3
14 8	−1.8	818	2.8	786	2.8	W 53.8
14 25	+1.0	1030	2.8	966	3.2	O 61.9
14 42	−0.8	854	4.9	801	3.5	W 55.3
15 5	+1.8	1092	2.4	1069	3.3	O 52.7
15 22	−1.8	910	3.7	889	4.2	W 63.0
15 37	−2.0	966	3.2	936	2.7	W 62.5
15 56	−1.8	987	2.2	967	2.5	W 69.2
16 14	−3.2	936	2.7	966	3.2	W 58.6
16 26	+3.8	1092	2.4	1088	3.6	O 65.4
16 42	+6.6	1131	3.6	1158	3.0	O 49.2
16 58	+2.4	1175	1.9	1119	2.7	O 44.4
17 9	−1.2	1178	3.9	1125	3.5	O 67.3
17 29	+1.2	1092	2.4	1039	3.5	W 66.3
17 40	−1.6	1088	3.6	1063	2.6	W 63.8
18 0	+1.8	1039	3.5	1092	2.4	W 62.2
18 15	+2.8	1056	2.6	1092	2.4	W 59.8
18 33	+3.8	1175	1.9	1131	3.6	W 48.4
18 59	+2.6	1158	3.0	1100	3.1	W 50.0
19 11	+1.4	1357	2.4	1407	2.9	O 56.0
19 31	−1.6	1196	4.7	1259	3.0	W 69.2
19 43	+1.0	1407	2.9	1357	2.4	O 60.9
19 56	−0.6	1193	1.0	1134	2.8	W 53.3
20 15	−6.8	1389	3.1	1378	4.2	O 63.6
20 34	−3.8	1403	3.8	1457	4.3	O 58.1
20 57	−1.8	1283	2.8	1231	2.9	W 48.6
21 12	−2.0	1357	2.4	1321	3.1	W 62.5
21 28	−2.6	1361	3.5	1289	4.1	W 34.9
21 42	−0.8	1325	2.3	1251	3.3	W 52.1
21 50	−3.2	1321	3.1	1357	2.4	W 57.9
22 36	+7.0	4	2.2	21	2.3	O 35.6
22 51	−2.6	1366	4.8	1389	3.1	W 55.2
23 11	−1.4	1466	4.2	1523	2.4	W 68.8
23 31	+1.4	55	3.9	116	3.5	O 53.9
23 47	+1.6	36	3.2	85	3.4	O 64.2
23 56	+6.4	91	3.2	86	2.7	O 35.2

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 2	+ 1.2	116	3.5	55	3.9	O 58.2	11 51	− 3.4	690	3.2	718	3.4	W 61.6
0 17	+ 1.4	116	3.5	71	2.1	O 61.0	12 2	+ 3.4	842	2.2	883	2.1	O 39.7
0 33	+ 1.4	174	4.0	131	2.1	O 51.8	12 20	− 3.0	645	3.9	702	1.8	W 32.6
0 38	+ 1.4	1596	4.5	1546	4.5	W 62.8	12 27	+ 2.8	883	2.1	842	2.2	O 41.2
1 3	+ 2.2	39	2.2	3	2.1	W 63.2	12 45	− 6.4	866	1.8	839	2.9	O 46.0
1 9	− 3.0	1531	3.7	1568	4.1	W 48.0	12 58	− 3.6	718	3.4	719	3.6	W 54.5
1 27	− 4.2	54	2.0	21	2.3	W 36.8	13 8	+ 4.2	920	2.4	885	3.4	O 32.2
1 37	− 1.0	71	2.1	15	3.5	W 61.4	13 26	− 4.2	912	2.9	882	3.4	O 55.9
1 54	− 5.4	21	2.3	54	2.0	W 35.6	13 46	+ 1.0	1000	3.3	966	3.2	O 58.6
2 3	− 1.4	15	3.5	71	2.1	W 58.3	14 6	+ 1.2	966	3.2	1030	2.8	O 59.6
2 18	+ 1.0	299	3.8	248	3.0	O 52.6	14 23	− 2.4	936	2.7	987	2.2	O 65.9
2 44	− 1.0	134	3.0	85	3.4	W 61.2	14 38	− 0.8	854	4.9	801	3.5	W 56.5
2 53	+ 4.4	214	4.4	270	3.7	O 37.6	15 11	− 4.0	842	2.2	839	2.9	W 37.2
3 13	− 1.6	85	3.4	134	3.0	W 57.4	15 28	− 4.4	1051	1.2	1100	3.1	O 53.7
3 28	− 2.0	134	3.0	116	3.5	W 56.7	15 39	+ 1.6	936	2.7	893	1.0	W 63.2
3 40	+ 3.4	179	4.4	131	2.1	W 47.6	15 59	+ 2.6	1158	3.0	1119	2.7	O 42.4
3 56	− 2.8	329	1.0	275	3.3	O 48.4	16 11	− 3.0	889	4.2	910	3.7	W 54.9
4 10	− 2.2	354	2.6	412	2.9	O 58.1	16 30	+ 4.2	966	3.2	1012	2.3	W 58.3
4 28	+ 1.4	434	1.0	387	1.9	O 49.2	16 46	+ 6.0	1151	2.3	1175	1.9	O 43.8
4 45	− 1.2	412	2.9	354	2.6	O 63.1	17 4	+ 2.6	1017	2.6	987	2.2	W 58.7
5 1	+ 5.6	434	1.0	440	3.4	O 55.3	17 21	− 2.6	1017	2.6	1069	3.3	W 56.3
5 18	− 0.8	248	3.0	189	2.5	W 52.4	17 40	+ 1.4	1092	2.4	1056	2.6	W 65.1
5 37	− 4.4	270	3.7	312	4.1	W 36.3	17 48	+ 4.0	1193	1.0	1231	2.9	O 57.0
6 17	− 1.0	319	3.3	265	4.1	W 52.3	18 7	− 3.6	1073	2.3	1119	2.7	W 43.9
6 30	− 2.4	388	2.7	354	2.6	W 59.2	18 16	− 2.8	1063	2.6	1088	3.6	W 58.6
6 46	− 4.4	319	3.3	320	3.2	W 49.0	18 35	+ 0.8	1125	3.5	1084	3.2	W 62.1
6 56	− 1.2	388	2.7	330	1.0	W 57.0	18 55	− 2.8	1100	3.1	1092	2.4	W 52.4
7 11	− 3.4	354	2.6	388	2.7	W 54.2	19 10	− 3.2	1146	3.6	1118	1.7	W 38.3
7 22	+ 4.4	537	3.3	585	2.1	O 35.2	19 30	+ 1.8	1378	4.2	1325	2.3	O 56.1
7 36	− 4.2	440	3.4	434	1.0	W 60.9	19 48	+ 1.0	1407	2.9	1357	2.4	O 61.9
7 43	+ 3.4	585	2.1	537	3.3	O 36.2	20 5	− 1.4	1259	3.0	1227	3.2	W 67.7
7 59	+ 2.4	645	3.9	601	3.5	O 32.4	20 20	− 2.4	1283	2.8	1237	4.9	W 51.6
8 26	+ 1.6	690	3.2	647	3.4	O 48.4	20 48	− 1.8	1283	2.8	1231	2.9	W 50.0
8 32	+ 1.6	690	3.2	657	3.0	O 49.7	21 2	− 2.0	1357	2.4	1321	3.1	W 63.4
8 49	− 3.8	483	3.0	537	3.3	W 36.0	21 15	− 2.6	1361	3.5	1289	4.1	W 35.6
9 5	+ 3.0	523	2.8	484	1.8	W 55.2	21 34	− 3.4	1321	3.1	1357	2.4	W 60.1
9 19	− 3.6	502	3.4	533	4.4	W 50.6	21 52	+ 4.6	1389	3.1	1428	2.8	W 65.4
9 30	+ 3.6	719	3.6	718	3.4	O 56.0	22 38	− 3.0	1366	4.8	1389	3.1	W 57.9
9 53	− 1.8	569	2.9	523	2.8	W 47.2	22 52	− 1.0	1457	4.3	1407	2.9	W 62.6
10 14	+ 4.4	702	1.8	746	4.8	O 34.6	23 11	+ 5.0	1514	3.2	1501	2.9	W 65.6
10 24	+ 1.6	792	2.6	740	3.8	O 46.8	23 27	− 1.6	1407	2.9	1457	4.3	W 57.1
10 52	− 1.2	821	2.8	786	2.8	O 58.7	23 47	+ 1.8	71	2.1	116	3.5	O 57.0
11 8	− 2.2	830	4.2	792	2.6	O 55.0							
11 24	− 2.0	718	3.4	690	3.2	W 63.9							
11 30	+ 1.2	690	3.2	641	3.4	W 64.3							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0,1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 0	−5.2	1510	3.5	1500	2.0	W 30.8	12 5	−3.2	645	3.9	702	1.8	W 34.0
0 18	−2.4	1568	4.1	1531	3.7	W 54.0	12 19	+3.6	842	2.2	883	2.1	O 40.9
0 24	+1.2	116	3.5	71	2.1	O 62.1	12 34	−3.2	730	3.6	688	2.7	W 27.3
0 40	+1.4	174	4.0	131	2.1	O 53.1	12 41	+2.8	883	2.1	842	2.2	O 42.2
0 45	+1.4	1596	4.5	1546	4.5	W 61.8	12 59	+2.2	936	2.7	912	2.9	O 54.7
1 14	+2.0	39	2.2	3	2.1	W 62.1	13 14	+1.0	967	2.5	912	2.9	O 56.0
1 32	−1.2	71	2.1	15	3.5	W 62.1	13 27	+1.0	786	2.8	744	2.1	W 61.5
1 40	+1.8	174	4.0	134	3.0	O 63.2	13 49	−2.0	818	2.8	786	2.8	W 56.5
1 57	−3.8	58	4.1	99	3.6	W 49.1	13 55	+2.6	1032	4.2	976	3.0	O 24.8
2 23	+0.8	299	3.8	248	3.0	O 53.8	14 12	+1.0	966	3.2	1030	2.8	O 60.8
2 39	−1.2	134	3.0	85	3.4	W 62.0	14 31	−1.4	987	2.2	936	2.7	O 66.3
2 54	−3.8	117	3.3	91	3.2	W 53.5	14 51	−4.2	842	2.2	839	2.9	W 39.2
3 7	+4.0	251	3.0	244	2.9	O 65.2	15 4	−2.0	910	3.7	889	4.2	W 65.6
3 24	−4.4	91	3.2	117	3.3	W 31.6	15 24	+1.8	1092	2.4	1069	3.3	O 55.4
3 38	+4.6	320	3.2	319	3.3	O 53.3	15 39	−4.0	936	2.7	966	3.2	W 62.8
3 57	+3.8	179	4.4	131	2.1	W 45.8	15 56	−3.0	889	4.2	910	3.7	W 57.8
3 59	−2.2	354	2.6	412	2.9	O 55.9	16 15	+2.0	1012	2.3	966	3.2	W 59.2
4 21	−1.2	234	3.9	174	4.0	W 54.5	16 22	−3.4	1092	2.4	1137	3.3	O 64.0
4 39	−1.2	412	2.9	354	2.6	O 62.2	16 43	+2.6	1131	3.6	1182	2.8	O 50.2
4 46	+3.6	388	2.7	414	2.0	O 57.1	16 57	−1.0	1178	3.9	1125	3.5	O 65.9
5 1	+1.8	373	2.1	343	1.8	O 69.5	17 17	+2.8	1017	2.6	987	2.2	W 56.5
5 20	+2.0	388	2.7	434	1.0	O 59.7	17 23	−1.8	1088	3.6	1063	2.6	W 66.0
5 29	+7.2	434	1.0	440	3.4	O 59.6	17 41	+7.4	1069	3.3	1105	3.2	W 55.8
6 12	−1.0	319	3.3	265	4.1	W 53.3	18 1	−0.8	1069	3.3	1003	3.5	W 53.8
6 31	−1.6	319	3.3	292	3.9	W 51.1	18 18	+2.0	1039	3.5	1092	2.4	W 58.9
6 50	−1.0	388	2.7	330	1.0	W 58.1	18 36	−1.6	1063	2.6	1100	3.1	W 54.1
7 10	+3.8	520	4.6	557	3.7	O 45.0	18 54	−3.4	1146	3.6	1118	1.7	W 39.6
7 23	−1.4	330	1.0	388	2.7	W 53.0	19 14	+4.8	1175	1.9	1131	3.6	W 45.5
7 31	+2.8	557	3.7	520	4.6	O 45.9	19 30	−3.4	1265	4.6	1325	2.3	O 56.7
7 49	+2.8	601	3.5	645	3.9	O 31.8	19 49	−0.6	1193	1.0	1134	2.8	W 55.0
8 11	+2.6	645	3.9	601	3.5	O 33.2	20 8	−2.6	1283	2.8	1237	4.9	W 52.7
8 34	+1.6	690	3.2	647	3.4	O 49.8	20 20	+2.0	1259	3.0	1321	3.1	W 66.5
8 40	+1.8	690	3.2	657	3.0	O 51.0	20 40	+5.6	1500	2.0	1510	3.5	O 28.9
8 56	−1.6	520	4.6	460	1.9	W 44.9	21 2	−3.0	1361	3.5	1289	4.1	W 36.4
9 1	−3.8	502	3.4	533	4.4	W 52.6	21 17	−3.6	1321	3.1	1357	2.4	W 62.4
9 20	+3.0	523	2.8	484	1.8	W 53.0	21 35	−0.8	1325	2.3	1251	3.3	W 53.8
9 41	−2.6	604	3.1	557	3.7	W 45.8	21 47	+2.0	1428	2.8	1389	3.1	W 65.5
9 59	−3.4	557	3.7	604	3.1	W 45.1	22 10	+7.4	1451	1.8	1397	2.5	W 34.6
10 9	−2.0	523	2.8	569	2.9	W 45.7	22 23	−3.2	1366	4.8	1389	3.1	W 60.5
10 32	+1.6	792	2.6	740	3.8	O 47.8	22 47	−1.2	1457	4.3	1407	2.9	W 63.5
10 46	−1.0	821	2.8	786	2.8	O 57.4	23 2	−5.2	1596	4.5	36	3.2	O 60.4
11 1	+3.6	816	1.7	839	2.9	O 37.2	23 22	−1.0	94	3.6	39	2.2	O 58.8
11 13	+1.4	843	1.1	818	2.8	O 53.2	23 37	−2.0	36	3.2	1596	4.5	O 64.0
11 34	−3.8	690	3.2	718	3.4	W 63.4	23 56	+1.8	71	2.1	116	3.5	O 58.6
11 43	−2.8	702	1.8	645	3.9	W 35.2							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 5	+1.8	71	2.1	116	3.5	O 59.9
0 25	+0.8	189	2.5	131	2.1	O 51.9
0 30	+1.4	116	3.5	71	2.1	O 62.6
0 47	+1.6	174	4.0	131	2.1	O 53.8
0 52	+1.6	1596	4.5	1546	4.5	W 60.5
1 24	+2.2	39	2.2	3	2.1	W 60.8
1 30	+2.8	134	3.0	174	4.0	O 62.8
1 49	-1.6	15	3.5	71	2.1	W 60.5
2 27	+1.0	299	3.8	248	3.0	O 54.6
2 35	-4.6	117	3.3	91	3.2	W 34.6
2 57	-1.6	85	3.4	134	3.0	W 60.4
3 8	-2.0	134	3.0	116	3.5	W 60.0
3 27	-3.4	329	1.0	275	3.3	O 46.6
3 37	+1.8	330	1.0	309	2.7	O 61.2
3 59	+2.0	354	2.6	319	3.3	O 55.5
4 14	+1.8	387	1.9	434	1.0	O 48.0
4 33	-1.4	412	2.9	354	2.6	O 61.4
4 47	+4.0	343	1.8	373	2.1	O 68.8
5 4	+4.4	388	2.7	414	2.0	O 59.1
5 15	-0.8	479	2.9	434	1.0	O 58.6
5 30	+2.2	388	2.7	434	1.0	O 60.5
5 38	+4.2	309	2.7	354	2.6	W 63.1
6 0	-7.0	319	3.3	320	3.2	W 54.8
6 7	-1.2	319	3.3	265	4.1	W 54.2
6 23	-1.8	319	3.3	292	3.9	W 52.6
6 35	-4.4	354	2.6	388	2.7	W 59.0
6 54	-4.4	520	4.6	470	2.5	O 44.6
7 16	-1.6	330	1.0	388	2.7	W 54.4
7 33	-2.0	387	1.9	354	2.6	W 47.7
8 3	+3.2	601	3.5	645	3.9	O 33.0
8 24	+2.8	645	3.9	601	3.5	O 34.2
8 42	+1.6	690	3.2	647	3.4	O 51.0
8 49	+1.8	690	3.2	657	3.0	O 52.4
9 8	+2.2	731	3.6	701	2.3	O 38.2
9 10	-2.0	460	1.9	520	4.6	W 43.8
9 36	-1.8	569	2.9	523	2.8	W 49.0
9 49	+2.0	762	3.0	740	3.8	O 44.8
10 7	+4.6	719	3.6	718	3.4	O 61.5
10 14	+2.0	740	3.8	792	2.6	O 46.0
10 37	-4.0	601	3.5	585	2.1	W 33.4
10 40	+1.8	792	2.6	740	3.8	O 48.8
11 8	-4.4	585	2.1	601	3.5	W 31.2
11 20	+1.6	843	1.1	818	2.8	O 54.6
11 37	-1.2	647	3.4	599	2.0	W 50.4
11 57	+2.8	882	3.4	866	1.8	O 44.0
12 17	-4.2	818	2.8	792	2.6	O 58.7
12 37	+4.2	842	2.2	883	2.1	O 42.4
12 47	+1.6	912	2.9	967	2.5	O 52.0
13 4	-1.2	827	4.3	872	2.8	O 76.5
13 21	+1.0	1000	3.3	952	3.3	O 52.2
13 39	-2.0	818	2.8	786	2.8	W 58.1
13 59	-2.6	936	2.7	987	2.2	O 63.0
14 8	+3.0	1032	4.2	976	3.0	O 25.6
14 24	-1.4	987	2.2	936	2.7	O 65.8
14 38	+0.8	1030	2.8	966	3.2	O 63.9
14 54	-2.0	910	3.7	889	4.2	W 66.8
15 1	+3.6	936	2.7	910	3.7	W 65.5
15 22	+0.8	1134	2.8	1069	3.3	O 55.8
15 41	-3.6	889	4.2	910	3.7	W 60.6
15 54	+1.6	936	2.7	893	1.0	W 60.4
16 8	+3.2	966	3.2	1017	2.6	W 61.5
16 25	+2.4	1012	2.3	966	3.2	W 58.4
16 43	-2.4	952	3.3	936	2.7	W 50.3
16 59	+0.8	1251	3.3	1193	1.0	O 54.3
17 14	-2.0	1088	3.6	1063	2.6	W 67.2
17 31	+3.2	1105	3.2	1069	3.3	W 56.3
17 47	-3.2	1063	2.6	1088	3.6	W 63.4
17 57	-0.6	1069	3.3	1003	3.5	W 55.1
18 19	+7.4	1158	3.0	1131	3.6	W 50.8
18 37	-3.8	1146	3.6	1118	1.7	W 40.8
18 46	+2.4	1366	4.8	1357	2.4	O 55.1
19 7	-4.8	1118	1.7	1146	3.6	W 38.8
19 19	-2.0	1151	2.3	1105	3.2	W 43.4
19 35	-1.4	1193	1.0	1148	3.4	W 56.7
19 51	-1.4	1259	3.0	1227	3.2	W 69.7
20 17	-4.2	1237	4.9	1283	2.8	W 52.3
20 30	-2.0	1283	2.8	1231	2.9	W 52.1
20 59	-2.4	1231	2.9	1283	2.8	W 49.0
21 8	+3.0	1510	3.5	1563	4.9	O 30.4
21 28	-1.8	1389	3.1	1366	4.8	W 68.2
21 42	+4.0	1531	3.7	1520	3.5	O 53.7
21 57	+2.4	1428	2.8	1389	3.1	W 64.7
22 7	+2.0	1596	4.5	1568	4.1	O 51.8
22 22	+6.0	3	2.1	15	3.5	O 58.6
22 41	+7.4	1389	3.1	1428	2.8	W 59.5
23 4	-4.2	1459	3.4	1434	3.0	W 39.6
23 17	-1.2	94	3.6	39	2.2	O 57.6
23 33	+2.8	15	3.5	3	2.1	O 69.3
23 52	+1.4	55	3.9	116	3.5	O 57.5

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 14	−1.0	1520	3.5	1449	2.9	W 53.2	12 55	+1.6	912	2.9	967	2.5	O 53.6
0 29	+0.8	189	2.5	131	2.1	O 53.0	13 10	−2.0	843	1.1	888	4.9	O 70.3
0 37	+1.4	116	3.5	71	2.1	O 63.4	13 29	−2.0	818	2.8	786	2.8	W 59.1
0 55	+1.4	174	4.0	131	2.1	O 55.1	13 46	−2.8	936	2.7	987	2.2	O 61.1
1 0	+1.6	1596	4.5	1546	4.5	W 59.2	14 6	−3.0	786	2.8	818	2.8	W 54.7
1 20	−1.2	71	2.1	15	3.5	W 63.6	14 26	−1.0	854	4.9	801	3.5	W 58.7
1 35	+2.2	39	2.2	3	2.1	W 59.1	14 44	−2.2	910	3.7	889	4.2	W 68.2
1 44	+3.0	134	3.0	174	4.0	O 64.0	15 3	+2.8	1069	3.3	1092	2.4	O 52.9
2 27	−1.2	134	3.0	85	3.4	W 63.5	15 23	−4.0	889	4.2	910	3.7	W 63.4
2 32	+1.0	299	3.8	248	3.0	O 55.5	15 43	+2.2	1092	2.4	1069	3.3	O 58.3
2 49	−1.6	85	3.4	134	3.0	W 61.5	16 2	+1.6	936	2.7	893	1.0	W 58.9
2 58	−2.2	134	3.0	116	3.5	W 61.6	16 15	+2.2	1182	2.8	1151	2.3	O 43.7
3 10	−3.6	329	1.0	275	3.3	O 45.2	16 31	−2.2	952	3.3	936	2.7	W 52.1
3 24	−1.2	131	2.1	85	3.4	W 51.9	16 38	+3.0	1175	1.9	1146	3.6	O 40.5
3 43	+1.2	373	2.1	319	3.3	O 54.8	17 3	+0.8	1251	3.3	1193	1.0	O 55.2
3 46	+1.8	330	1.0	309	2.7	O 62.8	17 11	+3.2	1131	3.6	1182	2.8	O 52.3
4 7	−1.4	182	4.0	127	3.9	W 43.9	17 31	−3.4	1063	2.6	1088	3.6	W 65.6
4 26	−1.4	412	2.9	354	2.6	O 60.0	17 51	+1.2	1092	2.4	1039	3.5	W 62.9
4 29	−1.6	174	4.0	234	3.9	W 54.3	18 11	−3.6	1100	3.1	1092	2.4	W 59.1
4 49	+1.4	434	1.0	387	1.9	O 52.2	18 21	+3.4	1290	3.8	1341	3.0	O 27.4
5 7	−0.8	248	3.0	189	2.5	W 55.1	18 40	+3.2	1341	3.0	1290	3.8	O 28.3
5 26	+5.2	388	2.7	414	2.0	O 61.2	18 54	−4.2	1105	3.2	1131	3.6	W 48.5
5 41	+2.2	388	2.7	434	1.0	O 61.6	19 14	−2.4	1325	2.3	1265	4.6	O 55.8
6 1	−1.0	319	3.3	265	4.1	W 55.1	19 28	−1.2	1193	1.0	1148	3.4	W 58.0
6 14	−1.8	319	3.3	292	3.9	W 54.0	19 45	−4.6	1151	2.3	1158	3.0	W 41.8
6 30	−2.6	434	1.0	484	1.8	O 64.2	20 4	+1.2	1407	2.9	1357	2.4	O 64.5
6 47	−2.8	329	1.0	320	3.2	W 47.6	20 22	+1.4	1321	3.1	1259	3.0	W 65.6
7 8	−1.6	330	1.0	388	2.7	W 55.8	20 41	+2.4	1259	3.0	1321	3.1	W 64.3
7 23	−1.8	387	1.9	354	2.6	W 49.2	20 47	−2.6	1231	2.9	1283	2.8	W 50.5
8 1	+3.0	461	5.0	523	2.8	W 57.0	21 5	−2.6	1398	4.3	1457	4.3	O 63.6
8 39	−1.8	520	4.6	460	1.9	W 46.6	21 23	−3.0	1457	4.3	1428	2.8	O 64.3
8 58	+1.8	690	3.2	657	3.0	O 53.8	21 43	+1.0	1321	3.1	1382	2.7	W 57.8
9 10	+3.2	710	4.3	708	3.0	O 47.5	22 2	+4.4	1531	3.7	1520	3.5	O 55.8
9 27	−2.0	569	2.9	523	2.8	W 50.0	22 17	+2.0	1596	4.5	1568	4.1	O 53.2
9 40	−4.2	708	3.0	664	4.2	O 49.6	22 35	−1.2	1457	4.3	1407	2.9	W 65.2
9 59	+2.2	762	3.0	740	3.8	O 46.1	22 43	−4.8	1459	3.4	1434	3.0	W 40.8
10 17	−4.6	601	3.5	585	2.1	W 34.6	23 3	−1.6	1407	2.9	1457	4.3	W 61.8
10 32	+4.0	800	2.3	793	3.6	O 26.4	23 16	−2.2	36	3.2	1596	4.5	O 61.9
10 49	+1.8	792	2.6	740	3.8	O 49.7	23 46	+2.0	127	3.9	99	3.6	O 45.9
11 8	+1.0	852	3.3	818	2.8	O 53.5	23 59	+1.4	55	3.9	116	3.5	O 58.6
11 28	+1.6	843	1.1	818	2.8	O 55.8							
11 47	+1.2	690	3.2	641	3.4	W 60.8							
12 2	−3.4	762	3.0	818	2.8	O 59.0							
12 20	−4.2	688	2.7	730	3.6	W 28.3							
12 30	+1.4	889	4.2	854	4.9	O 59.2							

Frühlingspunkts-Orts-Zeit		Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern		2. Stern		Höhe
h	m	m	Nr.	Gr.	Nr.	Gr.	°
0	6	+ 1.6	55	3.9	116	3.5	O 59.7
0	24	+ 1.8	71	2.1	116	3.5	O 62.9
0	44	+ 1.2	116	3.5	71	2.1	O 64.3
1	2	+ 1.6	174	4.0	131	2.1	O 56.0
1	14	- 1.0	71	2.1	15	3.5	W 64.3
1	33	- 1.6	15	3.5	71	2.1	W 63.0
1	46	+ 2.4	39	2.2	3	2.1	W 57.5
2	21	- 1.2	134	3.0	85	3.4	W 64.7
2	41	- 1.6	85	3.4	134	3.0	W 62.6
2	47	- 2.2	134	3.0	116	3.5	W 63.1
3	2	+ 2.8	309	2.7	330	1.0	O 55.6
3	20	+ 2.0	178	3.6	221	3.5	W 70.7
3	43	- 3.2	116	3.5	134	3.0	W 54.7
4	3	- 1.2	234	3.9	174	4.0	W 56.8
4	21	- 1.4	174	4.0	234	3.9	W 55.4
4	31	+ 1.8	387	1.9	434	1.0	O 50.4
4	56	+ 1.6	434	1.0	387	1.9	O 53.2
5	6	- 0.8	479	2.9	434	1.0	O 56.3
5	23	- 1.6	248	3.0	221	3.5	W 53.7
5	44	+ 2.0	354	2.6	309	2.7	W 62.4
5	56	- 1.0	319	3.3	265	4.1	W 55.9
6	5	- 1.8	319	3.3	292	3.9	W 55.2
6	23	+ 6.2	309	2.7	354	2.6	W 58.4
6	38	- 1.4	329	1.0	292	3.9	W 49.0
7	0	- 1.6	330	1.0	388	2.7	W 57.5
7	17	- 1.4	383	3.8	320	3.2	W 42.2
7	37	- 2.0	388	2.7	373	2.1	W 53.8
8	23	+ 2.0	647	3.4	690	3.2	O 48.7
8	30	- 1.8	520	4.6	460	1.9	W 47.4
8	50	- 2.2	460	1.9	520	4.6	W 46.0
9	4	- 4.2	537	3.3	519	2.2	W 38.0
9	19	- 4.8	708	3.0	664	4.2	O 48.0
9	37	- 2.4	523	2.8	569	2.9	W 49.6
9	54	- 5.6	601	3.5	585	2.1	W 35.7
10	10	+ 2.2	762	3.0	740	3.8	O 47.6
10	35	+ 2.2	740	3.8	792	2.6	O 48.8
10	52	+ 4.4	800	2.3	793	3.6	O 27.6
10	58	+ 1.8	792	2.6	740	3.8	O 50.6
11	13	+ 0.8	852	3.3	818	2.8	O 54.7
11	30	- 6.4	818	2.8	792	2.6	O 55.5
11	45	- 4.0	762	3.0	818	2.8	O 58.0
12	4	+ 1.8	854	4.9	889	4.2	O 55.7
12	25	+ 2.8	882	3.4	866	1.8	O 47.2
12	44	+ 3.6	912	2.9	936	2.7	O 52.7
13	3	+ 1.6	912	2.9	967	2.5	O 55.1
13	19	- 2.2	818	2.8	786	2.8	W 59.9
13	34	+ 2.6	936	2.7	912	2.9	O 59.2
13	51	- 3.0	786	2.8	818	2.8	W 56.8
14	10	- 1.6	987	2.2	936	2.7	O 63.9
14	23	- 4.6	793	3.6	800	2.3	W 26.6
14	39	+ 3.4	1032	4.2	976	3.0	O 27.1
14	58	+ 2.4	1073	2.3	1019	3.8	O 39.7
15	18	+ 3.6	1094	3.0	1121	1.9	O 30.6
15	33	+ 5.6	1051	1.2	1036	3.6	O 52.2
15	45	+ 3.4	1121	1.9	1094	3.0	O 32.3
15	54	+ 2.2	1092	2.4	1069	3.3	O 59.3
16	14	+ 1.8	1017	2.6	966	3.2	W 60.8
16	26	+ 2.0	1182	2.8	1151	2.3	O 45.0
16	40	+ 3.4	966	3.2	1017	2.6	W 58.6
17	0	+ 2.0	1227	3.2	1220	3.2	O 56.4
17	18	- 2.4	1036	3.6	1012	2.3	W 50.8
17	37	+ 2.6	1289	4.1	1240	3.0	O 30.2
17	57	+ 1.2	1092	2.4	1039	3.5	W 61.9
18	17	- 1.0	1069	3.3	1030	2.8	W 53.4
18	33	- 5.0	1105	3.2	1131	3.6	W 50.7
18	53	+ 0.8	1125	3.5	1084	3.2	W 58.1
19	8	- 1.6	1131	3.6	1092	2.4	W 48.5
19	28	- 2.4	1105	3.2	1151	2.3	W 43.0
19	39	- 0.6	1193	1.0	1134	2.8	W 57.2
19	54	+ 2.8	1434	3.0	1397	2.5	O 35.7
20	10	- 2.0	1283	2.8	1231	2.9	W 54.0
20	29	+ 1.4	1321	3.1	1259	3.0	W 65.2
20	45	+ 1.8	1516	1.2	1459	3.4	O 39.8
20	53	+ 2.4	1259	3.0	1321	3.1	W 62.8
21	8	- 3.2	1457	4.3	1428	2.8	O 63.1
21	24	- 0.8	1325	2.3	1251	3.3	W 56.2
21	39	+ 3.6	1510	3.5	1563	4.9	O 32.6
21	57	- 3.6	1483	4.8	1523	2.4	O 68.0
22	6	- 2.6	1325	2.3	1321	3.1	W 51.3
22	20	+ 2.2	1428	2.8	1389	3.1	W 62.4
22	38	+ 1.8	58	4.1	4	2.2	O 38.8
22	55	- 1.6	1407	2.9	1457	4.3	W 63.0
23	6	- 1.0	94	3.6	39	2.2	O 55.2
23	56	+ 2.0	127	3.9	99	3.6	O 47.2

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 5	−0.8	1520	3.5	1449	2.9	W 55.0	13 11	+1.6	912	2.9	967	2.5	O 56.5
0 17	+3.6	15	3.5	3	2.1	W 70.3	13 30	+3.2	967	2.5	966	3.2	O 58.3
0 36	+0.8	189	2.5	131	2.1	O 54.6	13 49	+1.2	786	2.8	744	2.1	W 56.6
0 43	+2.0	131	2.1	174	4.0	O 54.2	14 2	−1.6	987	2.2	936	2.7	O 63.1
1 10	+1.6	174	4.0	131	2.1	O 57.0	14 14	+1.2	1000	3.3	966	3.2	O 63.8
1 25	−1.6	15	3.5	71	2.1	W 63.9	14 28	−3.0	966	3.2	936	2.7	O 64.2
1 52	+2.8	251	3.0	248	3.0	O 51.5	14 48	+3.0	1019	3.8	1073	2.3	O 39.3
2 12	+1.2	248	3.0	299	3.8	O 53.0	15 8	+1.4	1092	2.4	1036	3.6	O 51.3
2 15	−1.4	134	3.0	85	3.4	W 65.4	15 25	−2.2	885	3.4	839	2.9	W 33.3
2 33	−1.8	85	3.4	134	3.0	W 63.8	15 36	+4.6	1094	3.0	1121	1.9	O 32.0
2 42	+1.0	299	3.8	248	3.0	O 57.4	15 48	−1.8	912	2.9	889	4.2	W 56.2
3 12	−1.2	131	2.1	85	3.4	W 54.2	16 8	−2.6	952	3.3	936	2.7	W 55.6
3 31	+1.6	178	3.6	235	3.4	W 70.2	16 27	−4.6	1119	2.7	1073	2.3	O 45.8
3 45	−2.8	292	3.9	343	1.8	O 62.6	16 44	−3.2	966	3.2	967	2.5	W 58.3
4 4	+2.0	330	1.0	309	2.7	O 65.6	17 1	+2.6	1012	2.3	966	3.2	W 53.8
4 14	−1.6	174	4.0	234	3.9	W 56.3	17 11	+0.8	1251	3.3	1193	1.0	O 56.9
4 31	+2.4	354	2.6	319	3.3	O 58.5	17 28	+3.0	1240	3.0	1289	4.1	O 29.8
4 41	+2.6	244	2.9	292	3.9	W 65.1	17 47	−0.8	1069	3.3	1003	3.5	W 57.2
5 0	−0.8	248	3.0	189	2.5	W 56.5	18 3	+1.2	1092	2.4	1039	3.5	W 60.6
5 15	−1.8	248	3.0	221	3.5	W 55.1	18 22	+4.4	1105	3.2	1069	3.3	W 51.6
5 35	−3.2	440	3.4	414	2.0	O 60.8	18 42	−4.2	1211	2.1	1283	2.8	O 53.6
5 54	+2.4	354	2.6	309	2.7	W 61.4	19 1	+1.0	1407	2.9	1352	1.3	O 50.3
6 4	−3.2	434	1.0	484	1.8	O 61.9	19 20	+3.6	1231	2.9	1193	1.0	W 58.6
6 17	−3.6	329	1.0	320	3.2	W 51.2	19 36	−0.8	1193	1.0	1134	2.8	W 58.1
6 35	−2.4	292	3.9	319	3.3	W 51.2	19 54	−2.6	1457	4.3	1403	3.8	O 52.2
6 52	−1.6	330	1.0	388	2.7	W 58.8	20 8	+3.0	1434	3.0	1397	2.5	O 36.8
7 10	−1.6	383	3.8	320	3.2	W 43.0	20 21	−3.0	1231	2.9	1283	2.8	W 53.5
7 27	−2.2	388	2.7	373	2.1	W 55.6	20 39	−3.2	1398	4.3	1457	4.3	O 61.1
7 39	+2.2	599	2.0	595	3.2	O 58.5	20 54	+2.0	1516	1.2	1459	3.4	O 40.8
8 21	−1.8	520	4.6	460	1.9	W 48.1	21 5	+2.6	1259	3.0	1321	3.1	W 61.0
8 40	+2.6	657	3.0	690	3.2	O 51.5	21 20	−0.6	1325	2.3	1251	3.3	W 57.0
9 7	+1.8	690	3.2	647	3.4	O 54.7	21 39	−4.2	1483	4.8	1523	2.4	O 65.9
9 25	−2.6	523	2.8	569	2.9	W 50.6	21 57	+4.2	1510	3.5	1563	4.9	O 33.6
9 44	+4.4	710	4.3	708	3.0	O 51.8	22 16	+3.6	1563	4.9	1510	3.5	O 34.2
10 8	+1.6	792	2.6	748	2.3	O 42.1	22 34	−3.4	1357	2.4	1366	4.8	W 55.2
10 21	+2.2	762	3.0	740	3.8	O 49.0	22 47	+1.8	58	4.1	4	2.2	O 39.8
10 29	−2.6	718	3.4	690	3.2	O 64.3	23 54	−3.8	71	2.1	39	2.2	O 60.0
10 46	+2.2	740	3.8	792	2.6	O 50.0							
11 4	+2.0	818	2.8	843	1.1	O 52.5							
11 20	−1.2	647	3.4	599	2.0	W 53.5							
11 44	+1.8	843	1.1	818	2.8	O 58.4							
11 59	+1.2	690	3.2	641	3.4	W 58.5							
12 13	+2.0	854	4.9	889	4.2	O 57.1							
12 31	−4.6	708	3.0	710	4.3	W 50.4							
12 51	−2.0	843	1.1	888	4.9	O 68.0							

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	Gr.	2. Stern Nr.	Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	Gr.	2. Stern Nr.	Gr.	Höhe
h m	m					°	h m	m					°
0 1	−0.8	1520	3.5	1449	2.9	W 55.8	12 8	−6.2	708	3.0	710	4.3	W 52.8
0 17	+2.4	127	3.9	99	3.6	O 49.9	12 18	+4.8	866	1.8	882	3.4	O 47.0
0 35	+4.2	15	3.5	3	2.1	W 69.7	12 35	−2.0	708	3.0	690	3.2	W 50.4
0 53	+2.2	131	2.1	174	4.0	O 55.5	12 55	+3.8	882	3.4	866	1.8	O 49.9
1 17	−1.6	15	3.5	71	2.1	W 64.8	13 17	−4.2	786	2.8	818	2.8	W 60.5
1 18	+1.6	174	4.0	131	2.1	O 58.1	13 27	−3.0	793	3.6	746	4.8	W 29.6
2 6	+3.0	251	3.0	248	3.0	O 53.8	13 46	+3.6	967	2.5	966	3.2	O 60.9
2 24	−1.8	85	3.4	134	3.0	W 64.8	14 1	+3.0	936	2.7	912	2.9	O 61.5
2 31	+4.0	134	3.0	174	4.0	W 65.2	14 13	−3.0	966	3.2	936	2.7	O 63.1
2 47	+1.0	299	3.8	248	3.0	O 58.4	14 34	+2.6	1073	2.3	1050	2.7	O 35.8
3 6	−1.4	131	2.1	85	3.4	W 55.2	14 50	+1.8	1036	3.6	1092	2.4	O 49.5
3 21	+5.2	320	3.2	329	1.0	O 48.8	15 3	+3.4	1019	3.8	1073	2.3	O 40.4
3 40	+2.2	178	3.6	221	3.5	W 69.2	15 23	−2.6	1069	3.3	1012	2.3	O 56.6
3 51	−1.4	234	3.9	174	4.0	W 58.2	15 36	+0.6	1134	2.8	1069	3.3	O 59.0
4 9	+2.6	387	1.9	414	2.0	O 49.0	15 55	−2.8	952	3.3	936	2.7	W 57.1
4 21	+4.0	319	3.3	354	2.6	O 58.3	16 4	−6.0	1119	2.7	1073	2.3	O 44.8
4 36	+1.6	292	3.9	244	2.9	W 65.0	16 22	+5.0	1121	1.9	1094	3.0	O 34.4
4 56	−0.8	248	3.0	189	2.5	W 57.4	16 33	+1.8	1017	2.6	966	3.2	W 58.8
5 11	+1.6	434	1.0	387	1.9	O 55.0	16 52	−3.0	1036	3.6	1012	2.3	W 53.2
5 30	−2.0	248	3.0	235	3.4	W 53.6	17 0	+1.4	1227	3.2	1193	1.0	O 56.1
5 50	+2.2	373	2.1	343	1.8	W 69.8	17 15	+0.8	1251	3.3	1193	1.0	O 57.8
6 10	−1.4	265	4.1	319	3.3	W 54.8	17 34	−2.4	1036	3.6	1017	2.6	W 50.4
6 28	+3.4	414	2.0	388	2.7	W 61.5	17 51	−2.0	1063	2.6	1100	3.1	W 61.4
6 44	−1.8	330	1.0	388	2.7	W 59.9	18 9	+1.2	1092	2.4	1039	3.5	W 59.5
6 54	−2.2	387	1.9	354	2.6	W 53.2	18 27	+3.6	1321	3.1	1325	2.3	O 52.8
7 11	+4.0	585	2.1	582	4.9	O 30.6	18 40	−2.2	1151	2.3	1105	3.2	W 48.0
7 16	−1.0	387	1.9	330	1.0	W 51.2	18 52	−1.8	1131	3.6	1092	2.4	W 51.0
7 32	−2.8	354	2.6	387	1.9	W 48.6	19 12	−2.4	1119	2.7	1105	3.2	W 43.1
7 50	+2.4	599	2.0	595	3.2	O 60.2	19 32	−0.8	1193	1.0	1134	2.8	W 59.0
7 55	+4.8	606	3.6	601	3.5	O 35.1	19 38	+4.0	1231	2.9	1193	1.0	W 57.2
8 12	−2.0	520	4.6	460	1.9	W 48.7	19 53	−2.8	1357	2.4	1321	3.1	O 64.2
8 28	−2.4	460	1.9	520	4.6	W 48.1	20 6	−3.4	1231	2.9	1283	2.8	W 54.8
8 45	+2.2	647	3.4	690	3.2	O 52.1	20 23	+5.2	1434	3.0	1397	2.5	O 37.8
9 2	−1.6	599	2.0	648	3.4	O 70.3	20 43	+1.4	1321	3.1	1259	3.0	W 63.5
9 16	+1.8	690	3.2	647	3.4	O 55.8	20 52	−1.8	1457	4.3	1398	4.3	O 62.0
9 31	−1.2	533	4.4	494	4.0	W 53.3	21 4	+2.2	1516	1.2	1459	3.4	O 41.7
9 55	+2.8	731	3.6	701	2.3	O 42.6	21 18	+2.8	1259	3.0	1321	3.1	W 58.9
10 6	+5.4	710	4.3	708	3.0	O 54.0	21 38	−3.4	1325	2.3	1321	3.1	W 55.8
10 16	+1.8	792	2.6	748	2.3	O 43.2	21 43	−1.0	1251	3.3	1325	2.3	W 53.9
10 32	+2.4	762	3.0	740	3.8	O 50.3	22 0	−1.8	1523	2.4	1483	4.8	O 68.2
10 51	+1.0	827	4.3	791	4.3	O 53.2	22 17	−1.2	1457	4.3	1407	2.9	W 67.7
10 57	+2.6	740	3.8	792	2.6	O 51.0	22 34	+2.2	4	2.2	58	4.1	O 39.0
11 16	+2.0	792	2.6	740	3.8	O 52.0	22 50	+2.4	1596	4.5	1568	4.1	O 56.7
11 22	+1.0	852	3.3	818	2.8	O 56.5	22 56	+2.0	58	4.1	4	2.2	O 40.7
11 37	−2.6	818	2.8	762	3.0	O 57.0	23 35	−4.6	71	2.1	39	2.2	O 58.2
11 53	+1.6	843	1.1	818	2.8	O 59.6	23 40	+3.0	99	3.6	127	3.9	O 45.6

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 21	− 1.0	1520	3.5	1473	3.7	W 54.3
0 30	+ 1.6	55	3.9	116	3.5	O 62.5
0 43	+ 0.8	189	2.5	131	2.1	O 56.0
0 56	+ 5.0	15	3.5	3	2.1	W 67.5
1 9	− 1.8	15	3.5	71	2.1	W 65.6
1 26	+ 1.6	174	4.0	131	2.1	O 58.9
2 15	− 1.8	85	3.4	134	3.0	W 65.9
2 26	+ 1.4	292	3.9	260	4.0	O 49.2
2 47	− 5.2	116	3.5	134	3.0	W 63.5
2 59	− 1.2	131	2.1	85	3.4	W 56.3
3 24	+ 1.4	373	2.1	329	1.0	O 49.7
3 41	+ 1.6	319	3.3	373	2.1	O 55.2
3 58	− 1.4	412	2.9	354	2.6	O 55.0
4 8	+ 1.4	373	2.1	319	3.3	O 58.6
4 25	+ 2.0	330	1.0	309	2.7	O 67.7
4 44	+ 1.6	292	3.9	244	2.9	W 64.5
5 0	− 4.2	440	3.4	414	2.0	O 56.4
5 20	− 2.0	248	3.0	235	3.4	W 55.3
5 40	− 1.0	319	3.3	265	4.1	W 58.7
6 1	+ 2.4	373	2.1	343	1.8	W 68.8
6 18	+ 2.6	354	2.6	309	2.7	W 58.6
6 35	− 1.6	330	1.0	388	2.7	W 61.2
6 54	− 5.6	533	4.4	502	3.4	O 53.1
7 11	− 1.2	387	1.9	330	1.0	W 52.1
7 31	+ 4.6	585	2.1	582	4.9	O 31.8
8 2	+ 2.6	599	2.0	595	3.2	O 62.1
8 16	− 2.4	460	1.9	520	4.6	W 48.8
8 26	+ 2.0	664	4.2	626	3.8	O 39.8
8 54	− 1.6	599	2.0	648	3.4	O 69.3
9 12	− 1.0	648	3.4	599	2.0	O 70.8
9 25	− 1.4	533	4.4	494	4.0	W 54.2
9 45	+ 3.4	701	2.3	731	3.6	O 42.0
10 2	− 3.0	718	3.4	690	3.2	O 62.0
10 11	+ 3.2	740	3.8	762	3.0	O 48.2
10 25	+ 1.6	792	2.6	748	2.3	O 44.4
10 45	− 2.0	601	3.5	557	3.7	W 35.5
10 56	+ 1.2	827	4.3	791	4.3	O 54.2
11 10	+ 2.6	740	3.8	792	2.6	O 52.0
11 27	+ 1.0	852	3.3	818	2.8	O 57.5
11 45	+ 2.2	842	2.2	882	3.4	O 41.8
12 1	+ 1.6	843	1.1	818	2.8	O 60.9
12 11	+ 1.2	690	3.2	641	3.4	W 55.8
12 25	− 2.0	708	3.0	690	3.2	W 51.8
12 43	− 2.4	766	3.4	731	3.6	W 43.0
13 3	− 3.0	731	3.6	766	3.4	W 42.0
13 12	− 3.0	793	3.6	746	4.8	W 30.4
13 30	− 3.4	746	4.8	793	3.6	W 29.6
13 46	− 1.6	987	2.2	936	2.7	O 60.4
14 4	+ 3.8	967	2.5	966	3.2	O 63.8
14 22	− 1.6	816	1.7	762	3.0	W 41.0
14 32	− 2.4	866	1.8	838	3.1	W 50.0
14 47	+ 2.6	1073	2.3	1050	2.7	O 37.0
15 3	− 2.0	885	3.4	839	2.9	W 35.2
15 22	+ 1.4	1092	2.4	1036	3.6	O 53.2
15 41	− 3.0	952	3.3	936	2.7	W 59.0
15 52	− 2.0	1137	3.3	1092	2.4	O 59.1
16 10	− 3.8	966	3.2	967	2.5	W 63.8
16 21	− 1.4	1178	3.9	1125	3.5	O 59.6
16 37	− 3.0	1036	3.6	1012	2.3	W 54.1
16 52	+ 1.2	1148	3.4	1100	3.1	O 64.0
17 7	+ 1.4	1227	3.2	1193	1.0	O 57.5
17 22	− 2.6	1036	3.6	1017	2.6	W 51.7
17 41	− 2.2	1063	2.6	1100	3.1	W 62.6
18 0	− 1.2	1069	3.3	1030	2.8	W 56.7
18 15	+ 1.2	1092	2.4	1039	3.5	W 58.4
18 35	+ 2.4	1098	3.0	1148	3.4	W 65.8
18 51	− 2.6	1105	3.2	1151	2.3	W 47.3
19 1	− 1.4	1193	1.0	1148	3.4	W 61.8
19 21	− 3.2	1213	4.6	1175	1.9	W 41.4
19 39	− 3.0	1357	2.4	1321	3.1	O 63.0
19 58	+ 4.6	1231	2.9	1193	1.0	W 55.2
20 6	− 3.6	1398	4.3	1457	4.3	O 56.6
20 22	+ 2.4	1265	4.6	1193	1.0	W 51.8
20 39	+ 3.6	1434	3.0	1397	2.5	O 38.6
20 55	+ 3.6	1514	3.2	1520	3.5	O 50.5
21 15	+ 2.2	1516	1.2	1459	3.4	O 42.6
21 21	− 3.6	1325	2.3	1321	3.1	W 58.1
21 38	− 0.8	1251	3.3	1325	2.3	W 55.2
21 56	− 1.8	1352	1.3	1321	3.1	W 52.1
22 7	− 1.6	1466	4.2	1523	2.4	O 70.7
22 29	− 1.8	1407	2.9	1457	4.3	W 67.0
22 45	+ 2.2	4	2.2	58	4.1	O 40.1
23 2	+ 2.6	1596	4.5	1568	4.1	O 57.9
23 6	+ 2.0	58	4.1	4	2.2	O 41.6
23 55	+ 3.0	99	3.6	127	3.9	O 47.6
23 59	− 3.2	1520	3.5	1514	3.2	W 56.4

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 10	+3.4	99	3.6	127	3.9	O 49.4	12 48	−3.2	731	3.6	766	3.4	W 43.1
0 19	−1.0	1449	2.9	1520	3.5	W 53.7	12 57	−3.6	793	3.6	746	4.8	W 31.0
0 38	+1.6	55	3.9	116	3.5	O 63.2	13 13	−4.0	746	4.8	793	3.6	W 30.6
0 47	+0.8	189	2.5	131	2.1	O 56.8	13 33	+0.8	1003	3.5	952	3.3	O 56.3
1 15	+2.2	131	2.1	174	4.0	O 58.4	13 50	+1.0	1000	3.3	952	3.3	O 58.1
1 34	+1.6	174	4.0	131	2.1	O 59.4	14 4	−0.8	854	4.9	801	3.5	W 62.8
1 41	−2.2	4	2.2	1581	4.4	W 39.4	14 23	+4.6	967	2.5	966	3.2	O 66.0
2 6	−2.0	85	3.4	134	3.0	W 66.8	14 32	+1.4	1000	3.3	966	3.2	O 66.7
2 30	+1.2	248	3.0	299	3.8	O 56.4	14 48	−3.0	838	3.1	866	1.8	W 48.7
2 45	+2.2	174	4.0	134	3.0	W 64.3	15 8	+1.8	1036	3.6	1092	2.4	O 52.0
2 57	+1.0	299	3.8	248	3.0	O 60.0	15 28	+1.0	1134	2.8	1100	3.1	O 56.9
3 15	+1.0	361	1.6	319	3.3	O 53.8	15 43	+0.6	1134	2.8	1069	3.3	O 60.5
3 31	+1.2	373	2.1	329	1.0	O 51.0	15 51	−4.8	966	3.2	967	2.5	W 66.0
3 49	+1.6	319	3.3	373	2.1	O 56.4	16 5	−2.8	889	4.2	912	2.9	W 53.8
4 8	+4.6	309	2.7	330	1.0	O 66.3	16 24	+3.6	1158	3.0	1146	3.6	O 42.0
4 15	+1.2	373	2.1	319	3.3	O 59.4	16 42	+2.2	1100	3.1	1148	3.4	O 63.6
4 32	−5.0	388	2.7	354	2.6	O 58.4	17 2	+1.8	1211	2.1	1146	3.6	O 44.0
4 52	+1.6	292	3.9	244	2.9	W 63.5	17 14	+1.4	1227	3.2	1193	1.0	O 58.7
5 11	−4.0	248	3.0	251	3.0	W 56.8	17 30	−2.2	1063	2.6	1100	3.1	W 63.6
5 27	+1.6	434	1.0	387	1.9	O 56.4	17 43	+2.6	1227	3.2	1220	3.2	O 64.3
5 35	−1.0	319	3.3	265	4.1	W 59.4	18 3	−0.8	1003	3.5	1069	3.3	W 55.7
5 55	−3.2	292	3.9	319	3.3	W 57.1	18 21	+1.2	1092	2.4	1039	3.5	W 56.9
6 13	+2.6	373	2.1	343	1.8	W 67.5	18 38	−3.0	1105	3.2	1151	2.3	W 48.5
6 31	−2.4	387	1.9	354	2.6	W 55.7	18 47	−3.0	1119	2.7	1105	3.2	W 46.0
6 46	+2.8	557	3.7	537	3.3	O 38.0	19 5	+5.2	1321	3.1	1325	2.3	O 58.3
7 5	−1.2	387	1.9	330	1.0	W 53.2	19 25	−0.8	1193	1.0	1134	2.8	W 60.5
7 9	−1.8	320	3.2	383	3.8	W 43.8	19 46	−3.8	1146	3.6	1158	3.0	W 39.6
8 7	+1.6	664	4.2	601	3.5	O 36.8	20 4	+2.0	1398	4.3	1352	1.3	O 56.0
8 15	+2.8	599	2.0	595	3.2	O 63.9	20 18	−1.6	1193	1.0	1174	3.2	W 54.5
8 36	+2.4	664	4.2	626	3.8	O 40.8	20 35	−1.6	1240	3.0	1175	1.9	W 32.3
8 46	−1.6	599	2.0	648	3.4	O 68.0	20 47	−3.2	1220	3.2	1227	3.2	W 56.7
9 7	−1.0	648	3.4	599	2.0	O 70.2	21 5	+2.8	1459	3.4	1516	1.2	O 42.2
9 20	+3.2	657	3.0	690	3.2	O 57.1	21 13	+4.8	1514	3.2	1520	3.5	O 53.2
9 34	+2.0	690	3.2	647	3.4	O 57.4	21 26	+2.2	1516	1.2	1459	3.4	O 43.3
9 50	−1.6	494	4.0	533	4.4	W 50.9	21 42	−1.8	1523	2.4	1483	4.8	O 65.8
10 7	+2.0	748	2.3	792	2.6	O 42.6	21 59	−1.8	1466	4.2	1523	2.4	O 70.0
10 27	+3.6	740	3.8	762	3.0	O 50.0	22 9	−1.6	1361	3.5	1299	4.6	W 37.6
10 35	−2.0	601	3.5	557	3.7	W 36.4	22 20	−2.0	1407	2.9	1457	4.3	W 68.0
10 57	+2.8	762	3.0	740	3.8	O 52.4	22 39	−4.4	1568	4.1	1531	3.7	O 56.5
11 12	−2.8	818	2.8	762	3.0	O 55.0	22 56	+2.4	4	2.2	58	4.1	O 41.0
11 32	+1.0	852	3.3	818	2.8	O 58.6	23 16	+2.0	58	4.1	4	2.2	O 42.4
11 37	+2.6	818	2.8	843	1.1	O 58.0	23 43	−3.6	1520	3.5	1514	3.2	W 58.3
11 56	+2.4	842	2.2	882	3.4	O 43.1	23 53	−1.0	1520	3.5	1449	2.9	W 57.4
12 15	−2.2	708	3.0	690	3.2	W 53.2							
12 31	−2.6	766	3.4	731	3.6	W 43.7							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 11	−1.2	1520	3.5	1473	3.7	W 56.2	13 22	+2.0	967	2.5	952	3.3	O 55.6
0 27	+4.2	99	3.6	127	3.9	O 51.2	13 37	+0.8	1003	3.5	952	3.3	O 57.1
0 51	+0.8	189	2.5	131	2.1	O 57.8	13 55	+1.2	1000	3.3	952	3.3	O 58.9
0 56	+3.0	127	3.9	99	3.6	O 53.5	14 8	−2.8	866	1.8	838	3.1	W 51.8
1 16	+2.2	36	3.2	85	3.4	W 69.3	14 22	−1.2	801	3.5	854	4.9	W 60.6
1 30	+1.2	251	3.0	190	3.0	O 46.0	14 39	+1.2	1000	3.3	966	3.2	O 67.5
1 43	+1.4	251	3.0	211	1.9	O 48.5	14 47	+3.6	1050	2.7	1073	2.3	O 37.4
2 36	+1.4	248	3.0	299	3.8	O 57.6	15 0	−3.0	839	2.9	885	3.4	W 35.8
2 56	+2.4	174	4.0	134	3.0	W 63.4	15 19	−3.2	1069	3.3	1017	2.6	O 57.5
3 5	+2.0	330	1.0	319	3.3	O 53.0	15 37	+1.6	1092	2.4	1036	3.6	O 54.9
3 20	+1.2	361	1.6	319	3.3	O 54.9	15 51	−2.8	889	4.2	912	2.9	W 56.2
3 37	+1.4	373	2.1	329	1.0	O 51.8	16 8	−1.4	1178	3.9	1125	3.5	O 57.0
3 57	+1.8	319	3.3	373	2.1	O 57.9	16 23	+2.2	1182	2.8	1146	3.6	O 42.6
4 14	+2.6	178	3.6	221	3.5	W 64.2	16 42	+4.4	1158	3.0	1146	3.6	O 43.6
4 21	+1.6	373	2.1	319	3.3	O 60.1	16 58	+1.0	1193	1.0	1251	3.3	O 55.7
4 40	−2.0	248	3.0	221	3.5	W 60.1	17 7	+4.8	1151	2.3	1182	2.8	O 49.4
5 0	+1.8	292	3.9	244	2.9	W 62.8	17 27	+0.8	1251	3.3	1193	1.0	O 60.2
5 19	+2.4	387	1.9	434	1.0	O 56.2	17 47	−1.2	1069	3.3	1030	2.8	W 59.2
5 39	−3.8	292	3.9	319	3.3	W 59.0	17 59	−1.0	1003	3.5	1069	3.3	W 56.4
5 50	−2.0	484	1.8	434	1.0	O 59.7	18 20	+1.2	1148	3.4	1098	3.0	W 67.2
6 0	−1.8	329	1.0	292	3.9	W 54.5	18 32	−3.4	1119	2.7	1105	3.2	W 47.6
6 19	−2.8	387	1.9	354	2.6	W 56.6	18 47	−1.6	1193	1.0	1148	3.4	W 63.0
6 30	+3.4	537	3.3	557	3.7	O 36.8	19 7	−4.2	1357	2.4	1321	3.1	O 59.3
6 48	−3.8	354	2.6	387	1.9	W 54.2	19 27	−4.8	1146	3.6	1158	3.0	W 41.5
7 1	+4.0	388	2.7	434	1.0	W 60.4	19 47	−1.0	1134	2.8	1193	1.0	W 57.6
7 57	+2.0	601	3.5	664	4.2	O 36.4	20 10	−1.4	1193	1.0	1174	3.2	W 55.8
8 15	+1.8	664	4.2	601	3.5	O 37.5	20 27	+1.8	1357	2.4	1407	2.9	O 68.0
8 29	+3.2	599	2.0	595	3.2	O 65.6	20 31	−3.6	1220	3.2	1227	3.2	W 59.8
8 48	+2.4	664	4.2	626	3.8	O 41.7	21 5	−1.2	1283	2.8	1227	3.2	W 52.6
9 2	−1.0	648	3.4	599	2.0	O 69.5	21 19	+3.2	1459	3.4	1516	1.2	O 43.2
9 21	+3.0	647	3.4	690	3.2	O 56.6	21 37	−2.2	1352	1.3	1321	3.1	W 54.8
9 36	+4.0	657	3.0	690	3.2	O 58.9	21 50	−2.0	1466	4.2	1523	2.4	O 69.2
9 52	+2.2	762	3.0	748	2.3	O 42.8	22 10	−2.0	1407	2.9	1457	4.3	W 69.2
10 17	+2.4	748	2.3	792	2.6	O 44.0	22 21	−2.2	1373	3.9	1358	3.6	W 55.4
10 25	−2.2	601	3.5	557	3.7	W 37.4	23 0	+1.2	85	3.4	42	4.7	O 49.6
10 45	+4.6	740	3.8	762	3.0	O 51.8	23 8	+2.6	4	2.2	58	4.1	O 42.2
11 5	+1.6	827	4.3	818	2.8	O 55.6	23 26	+2.2	58	4.1	4	2.2	O 43.0
11 22	−1.4	599	2.0	647	3.4	W 54.2	23 48	−0.8	1520	3.5	1449	2.9	W 58.4
11 37	+1.0	852	3.3	818	2.8	O 59.5							
11 50	+2.8	818	2.8	843	1.1	O 59.8							
12 8	+2.6	842	2.2	882	3.4	O 44.3							
12 21	−1.4	827	4.3	872	2.8	O 69.8							
12 32	−4.0	731	3.6	766	3.4	W 44.0							
12 45	−2.8	690	3.2	708	3.0	W 49.4							
12 53	−5.4	746	4.8	793	3.6	W 31.4							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 5	−1.0	1520	3.5	1473	3.7	W 57.4	13 6	+2.4	854	4.9	889	4.2	O 64.0
0 25	+1.0	165	3.9	131	2.1	O 55.4	13 21	−1.8	987	2.2	936	2.7	O 56.1
0 38	−1.0	1520	3.5	1490	3.9	W 53.6	13 41	+0.8	1003	3.5	952	3.3	O 58.1
0 55	+0.6	189	2.5	131	2.1	O 58.6	14 1	+1.0	1000	3.3	952	3.3	O 59.7
1 17	−2.6	4	2.2	1581	4.4	W 41.8	14 16	+2.0	1051	1.2	1019	3.8	O 40.4
1 36	+1.2	251	3.0	190	3.0	O 46.9	14 33	−1.8	816	1.7	792	2.6	W 41.8
1 51	+1.8	251	3.0	230	3.0	O 49.8	14 45	−3.0	839	2.9	885	3.4	W 36.9
2 18	+2.2	260	4.0	292	3.9	O 48.7	15 5	+4.2	1050	2.7	1073	2.3	O 38.8
2 39	−1.4	131	2.1	85	3.4	W 59.2	15 25	+3.2	1094	3.0	1118	1.7	O 33.9
2 50	+1.6	292	3.9	260	4.0	O 52.7	15 45	+1.6	1092	2.4	1036	3.6	O 55.6
3 8	+2.4	174	4.0	134	3.0	W 62.2	16 1	−1.4	1178	3.9	1125	3.5	O 55.6
3 26	+1.2	361	1.6	319	3.3	O 55.8	16 6	+2.4	1146	3.6	1182	2.8	O 41.0
3 44	+1.4	373	2.1	329	1.0	O 53.0	16 34	+2.2	1182	2.8	1146	3.6	O 43.8
3 51	+1.4	221	3.5	178	3.6	W 67.0	16 49	+2.0	1193	1.0	1227	3.2	O 54.9
4 6	+1.8	319	3.3	373	2.1	O 59.0	17 3	+1.0	1193	1.0	1251	3.3	O 56.7
4 25	+2.8	354	2.6	329	1.0	O 55.8	17 20	+2.0	1211	2.1	1146	3.6	O 45.4
4 41	−0.8	248	3.0	189	2.5	W 60.4	17 39	−4.0	1283	2.8	1211	2.1	O 48.4
4 48	−2.4	248	3.0	235	3.4	W 60.1	17 54	−1.0	1003	3.5	1069	3.3	W 57.4
5 8	−2.6	221	3.5	248	3.0	W 56.7	18 5	−4.0	1105	3.2	1151	2.3	W 50.6
5 24	−1.2	319	3.3	265	4.1	W 60.8	18 16	−2.0	1131	3.6	1092	2.4	W 55.4
5 43	−1.4	265	4.1	319	3.3	W 59.1	18 26	+1.4	1148	3.4	1098	3.0	W 66.2
5 51	−1.8	329	1.0	292	3.9	W 55.5	18 45	−2.4	1092	2.4	1131	3.6	W 52.6
6 8	−2.0	330	1.0	388	2.7	W 64.7	19 3	+1.8	1321	3.1	1283	2.8	O 56.8
6 26	−3.0	388	2.7	373	2.1	W 64.2	19 21	−2.2	1105	3.2	1146	3.6	W 41.7
6 41	−1.2	319	3.3	299	3.8	W 53.8	19 28	+1.0	1407	2.9	1352	1.3	O 55.2
6 53	+2.0	434	1.0	388	2.7	W 60.9	19 42	−0.8	1134	2.8	1193	1.0	W 58.6
7 16	+3.2	557	3.7	537	3.3	O 40.3	19 58	−3.0	1389	3.1	1366	4.8	O 66.0
7 21	+4.4	388	2.7	434	1.0	W 58.4	20 18	−2.0	1240	3.0	1175	1.9	W 34.0
8 7	+2.0	601	3.5	664	4.2	O 37.2	20 34	−2.0	1175	1.9	1240	3.0	W 33.0
8 24	+1.8	664	4.2	601	3.5	O 38.2	20 59	−1.0	1283	2.8	1227	3.2	W 53.7
8 41	+3.0	626	3.8	664	4.2	O 41.6	21 13	+1.4	1321	3.1	1259	3.0	W 59.0
9 0	+2.6	664	4.2	626	3.8	O 42.6	21 26	−2.2	1352	1.3	1321	3.1	W 55.8
9 5	−1.4	533	4.4	494	4.0	W 57.2	21 40	−2.2	1466	4.2	1523	2.4	O 68.0
9 33	−1.6	494	4.0	533	4.4	W 53.9	21 58	−1.0	1523	2.4	1466	4.2	O 69.3
9 36	+3.0	647	3.4	690	3.2	O 58.3	22 12	−1.8	1299	4.6	1361	3.5	W 37.9
10 3	+2.0	762	3.0	748	2.3	O 44.1	22 49	+2.8	58	4.1	54	2.0	O 38.0
10 14	−2.2	601	3.5	557	3.7	W 38.3	23 6	+1.2	85	3.4	42	4.7	O 50.6
10 34	−2.6	557	3.7	601	3.5	W 37.1	23 21	+2.8	4	2.2	58	4.1	O 43.2
10 52	+2.0	792	2.6	748	2.3	O 47.2	23 37	+2.4	58	4.1	4	2.2	O 43.7
11 10	+1.2	818	2.8	852	3.3	O 55.2	23 44	−0.8	1520	3.5	1449	2.9	W 59.1
11 15	−1.4	599	2.0	647	3.4	W 55.3							
11 42	+1.2	852	3.3	818	2.8	O 60.5							
12 1	−3.6	818	2.8	786	2.8	O 61.4							
12 21	+2.8	842	2.2	882	3.4	O 45.6							
12 41	+2.4	882	3.4	842	2.2	O 46.6							

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für + 0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für + 0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 0	− 1.0	1520	3.5	1473	3.7	W 58.3	12 37	− 0.8	872	2.8	827	4.3	O 71.2
0 3	− 1.2	1449	2.9	1520	3.5	W 56.8	12 53	+ 2.4	882	3.4	842	2.2	O 47.4
0 30	+ 1.2	165	3.9	131	2.1	O 56.4	13 12	− 0.8	791	4.3	734	4.4	W 59.6
0 34	+ 1.0	131	2.1	189	2.5	O 55.8	13 30	+ 2.0	936	2.7	894	4.0	O 55.7
0 58	+ 0.8	189	2.5	131	2.1	O 59.2	13 50	− 1.6	816	1.7	762	3.0	W 45.0
1 9	− 4.8	134	3.0	116	3.5	O 65.0	14 6	+ 1.0	1000	3.3	952	3.3	O 60.8
1 20	+ 1.4	85	3.4	36	3.2	W 68.5	14 26	+ 2.4	1051	1.2	1019	3.8	O 41.5
1 38	+ 2.6	36	3.2	85	3.4	W 67.2	14 33	− 1.4	818	2.8	801	3.5	W 55.8
1 58	+ 1.4	251	3.0	211	1.9	O 50.7	14 49	− 2.2	912	2.9	889	4.2	W 63.9
2 0	+ 2.0	251	3.0	230	3.0	O 51.0	14 57	+ 4.4	1063	2.6	1069	3.3	O 56.7
2 29	+ 2.2	260	4.0	292	3.9	O 50.4	15 16	− 1.8	889	4.2	952	3.3	W 61.5
2 49	+ 1.4	248	3.0	299	3.8	O 59.8	15 34	− 3.2	1088	3.6	1063	2.6	O 63.6
3 9	− 2.4	251	3.0	309	2.7	O 61.0	15 54	+ 0.6	1134	2.8	1069	3.3	O 62.8
3 25	+ 2.0	330	1.0	319	3.3	O 56.2	16 6	+ 3.8	1118	1.7	1094	3.0	O 36.4
3 32	+ 1.2	361	1.6	319	3.3	O 57.0	16 18	+ 2.6	1146	3.6	1182	2.8	O 42.4
3 51	+ 1.6	373	2.1	329	1.0	O 54.1	16 45	+ 2.2	1182	2.8	1146	3.6	O 44.8
4 9	+ 4.8	329	1.0	354	2.6	O 54.7	17 1	− 2.0	979	3.2	953	3.4	W 40.2
4 21	− 2.0	248	3.0	221	3.5	W 62.5	17 18	+ 3.2	1196	4.7	1193	1.0	O 60.2
4 41	− 1.2	230	3.0	183	3.7	W 53.1	17 36	+ 0.8	1251	3.3	1193	1.0	O 62.2
4 55	− 3.0	221	3.5	248	3.0	W 58.9	17 50	− 2.2	1196	4.7	1259	3.0	O 64.8
5 12	+ 2.8	330	1.0	309	2.7	W 68.7	18 6	− 2.0	1131	3.6	1092	2.4	W 56.3
5 30	− 2.0	484	1.8	434	1.0	O 56.7	18 11	− 1.6	1030	2.8	1069	3.3	W 55.7
5 50	− 2.0	260	4.0	251	3.0	W 48.8	18 30	− 2.4	1094	3.0	1073	2.3	W 35.4
6 6	− 2.2	292	3.9	329	1.0	W 54.3	18 47	− 1.4	1151	2.3	1092	2.4	W 50.1
6 21	− 1.8	383	3.8	320	3.2	W 48.3	19 7	+ 1.4	1352	1.3	1407	2.9	O 52.4
6 39	− 2.2	320	3.2	383	3.8	W 47.3	19 20	− 3.8	1121	1.9	1140	4.7	W 28.8
6 55	+ 3.4	373	2.1	343	1.8	W 61.2	19 38	− 1.0	1134	2.8	1193	1.0	W 59.4
7 13	− 1.6	330	1.0	387	1.9	W 52.8	19 55	− 1.4	1193	1.0	1174	3.2	W 58.7
7 32	+ 4.2	557	3.7	537	3.3	O 41.4	20 8	− 2.0	1240	3.0	1175	1.9	W 34.8
8 17	+ 2.0	601	3.5	664	4.2	O 38.2	20 24	− 2.0	1175	1.9	1240	3.0	W 33.9
8 33	+ 2.0	664	4.2	601	3.5	O 39.0	20 54	− 1.2	1283	2.8	1227	3.2	W 54.7
8 52	− 1.2	648	3.4	599	2.0	O 68.0	21 13	− 2.0	1523	2.4	1483	4.8	O 61.4
8 58	− 1.4	533	4.4	494	4.0	W 58.3	21 29	− 2.2	1466	4.2	1523	2.4	O 66.2
9 13	+ 2.8	664	4.2	626	3.8	O 43.3	21 49	− 3.2	1321	3.1	1352	1.3	W 53.6
9 25	− 1.8	494	4.0	533	4.4	W 55.2	22 3	− 2.0	1299	4.6	1361	3.5	W 38.8
9 51	+ 3.6	647	3.4	690	3.2	O 59.2	23 3	+ 3.0	58	4.1	54	2.0	O 39.4
10 5	+ 1.4	786	2.8	748	2.3	O 45.0	23 12	+ 1.4	85	3.4	42	4.7	O 51.5
10 21	− 2.6	557	3.7	601	3.5	W 38.2	23 35	+ 3.2	4	2.2	58	4.1	O 44.0
10 39	+ 2.4	748	2.3	792	2.6	O 46.5	23 40	− 1.0	1520	3.5	1449	2.9	W 59.7
10 48	+ 1.6	791	4.3	827	4.3	O 53.6							
11 8	− 1.6	599	2.0	647	3.4	W 56.4							
11 22	+ 1.8	827	4.3	818	2.8	O 58.7							
11 41	− 2.8	708	3.0	690	3.2	W 57.0							
11 59	− 2.2	702	1.8	664	4.2	W 39.6							
12 18	+ 3.4	818	2.8	843	1.1	O 63.0							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 25	− 1.4	1473	3.7	1520	3.5	W 54.8
0 39	+ 1.0	131	2.1	189	2.5	O 56.9
0 56	− 1.4	4	2.2	1531	3.7	W 43.8
1 2	+ 0.8	189	2.5	131	2.1	O 59.9
1 17	− 4.0	1581	4.4	4	2.2	W 42.4
1 27	+ 1.4	190	3.0	251	3.0	O 46.6
1 39	+ 1.8	211	1.9	251	3.0	O 48.7
1 59	+ 3.6	71	2.1	116	3.5	W 65.0
2 10	+ 2.0	251	3.0	230	3.0	O 52.4
2 29	− 2.0	117	3.3	58	4.1	W 39.8
2 47	− 2.0	85	3.4	131	2.1	W 58.8
3 7	+ 2.0	292	3.9	260	4.0	O 54.8
3 27	+ 1.8	329	1.0	373	2.1	O 51.0
3 44	− 3.2	116	3.5	131	2.1	W 52.0
4 1	+ 1.2	235	3.4	178	3.6	W 65.9
4 11	− 2.4	248	3.0	221	3.5	W 63.4
4 31	+ 2.0	178	3.6	235	3.4	W 61.9
4 40	− 3.6	221	3.5	248	3.0	W 60.9
5 0	− 1.6	183	3.7	230	3.0	W 50.9
5 20	− 2.4	484	1.8	434	1.0	O 55.2
5 40	− 2.4	260	4.0	251	3.0	W 50.4
5 55	− 2.6	292	3.9	329	1.0	W 55.6
6 12	− 2.0	383	3.8	320	3.2	W 49.0
6 28	− 2.4	320	3.2	383	3.8	W 48.3
6 39	− 1.2	387	1.9	330	1.0	W 57.1
7 5	− 1.6	330	1.0	387	1.9	W 54.3
7 13	+ 2.4	434	1.0	388	2.7	W 59.0
7 37	− 2.0	387	1.9	373	2.1	W 51.4
7 46	+ 3.2	569	2.9	523	2.8	O 52.5
8 10	− 2.0	599	2.0	648	3.4	O 61.6
8 27	+ 2.2	601	3.5	664	4.2	O 39.0
8 46	− 1.0	648	3.4	599	2.0	O 67.2
8 51	− 1.6	533	4.4	494	4.0	W 59.1
9 14	+ 4.4	626	3.8	664	4.2	O 43.6
9 23	+ 0.8	745	3.5	708	3.0	O 53.1
9 48	− 1.8	537	3.3	502	3.4	W 40.0
10 8	− 3.2	557	3.7	601	3.5	W 39.1
10 25	+ 2.6	762	3.0	748	2.3	O 46.9
10 39	− 1.4	647	3.4	599	2.0	W 59.6
10 56	+ 1.6	791	4.3	827	4.3	O 55.2
11 12	+ 2.2	792	2.6	748	2.3	O 48.9
11 31	+ 2.0	827	4.3	818	2.8	O 60.1
11 48	− 2.6	702	1.8	664	4.2	W 40.4
12 8	− 2.8	664	4.2	702	1.8	W 39.2
12 25	− 1.4	888	4.9	843	1.1	O 63.2
12 43	+ 5.2	883	2.1	885	3.4	O 37.4
13 2	+ 3.0	952	3.3	967	2.5	O 52.7
13 19	+ 1.0	952	3.3	1003	3.5	O 55.2
13 37	+ 1.8	1012	2.3	979	3.2	O 40.8
13 53	+ 2.4	967	2.5	952	3.3	O 60.1
14 11	+ 1.2	1000	3.3	952	3.3	O 61.6
14 27	+ 1.8	1063	2.6	1036	3.6	O 50.9
14 38	+ 2.4	1051	1.2	1019	3.8	O 42.7
15 3	− 2.6	842	2.2	838	3.1	W 43.5
15 18	− 3.8	1088	3.6	1063	2.6	O 61.2
15 36	+ 1.0	1069	3.3	1134	2.8	O 60.6
15 52	+ 1.8	1148	3.4	1131	3.6	O 51.7
16 11	+ 2.0	1175	1.9	1132	4.9	O 33.3
16 31	+ 3.0	1146	3.6	1182	2.8	O 43.9
16 51	+ 2.0	979	3.2	953	3.4	W 41.4
17 9	+ 2.0	1193	1.0	1227	3.2	O 58.7
17 27	+ 2.6	1146	3.6	1211	2.1	O 46.3
17 45	− 1.0	1003	3.5	1069	3.3	W 59.3
18 3	− 1.8	1030	2.8	1069	3.3	W 57.2
18 20	− 3.0	1092	2.4	1131	3.6	W 55.6
18 40	− 1.6	1151	2.3	1092	2.4	W 51.0
18 58	− 2.6	1105	3.2	1146	3.6	W 44.2
19 14	+ 1.4	1352	1.3	1407	2.9	O 53.8
19 33	− 1.0	1134	2.8	1193	1.0	W 60.5
19 51	+ 2.6	1434	3.0	1409	3.1	O 31.8
20 14	− 2.4	1175	1.9	1240	3.0	W 34.8
20 48	− 1.2	1283	2.8	1227	3.2	W 55.6
21 3	− 2.6	1352	1.3	1321	3.1	W 58.1
21 18	− 2.4	1466	4.2	1523	2.4	O 64.5
21 33	− 3.8	1321	3.1	1352	1.3	W 55.8
21 53	− 2.4	1299	4.6	1361	3.5	W 39.9
22 7	− 1.6	1325	2.3	1308	3.1	W 54.5
22 39	− 3.4	1358	3.6	1373	3.9	W 53.0
23 18	+ 3.6	58	4.1	54	2.0	O 40.8
23 35	− 1.0	1520	3.5	1449	2.9	W 60.6
23 55	− 1.2	1520	3.5	1473	3.7	W 59.1
23 57	− 1.0	1449	2.9	1520	3.5	W 58.1

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 11	−2.4	15	3.5	71	2.1	O 66.5
0 21	−1.4	1520	3.5	1490	3.9	W 57.0
0 41	+1.2	165	3.9	131	2.1	O 58.5
0 57	−4.8	1581	4.4	4	2.2	W 43.8
1 11	−2.8	85	3.4	134	3.0	O 67.3
1 34	+1.4	190	3.0	251	3.0	O 47.5
1 53	+1.8	116	3.5	71	2.1	W 65.2
2 13	+1.8	251	3.0	211	1.9	O 52.6
2 20	+2.2	251	3.0	230	3.0	O 53.8
2 40	−3.0	131	2.1	116	3.5	W 60.5
2 43	−3.0	251	3.0	309	2.7	O 57.1
3 3	+1.6	248	3.0	299	3.8	O 62.0
3 23	+1.2	299	3.8	248	3.0	O 63.8
3 36	+2.0	329	1.0	373	2.1	O 52.5
3 49	+3.4	174	4.0	134	3.0	W 56.9
4 7	+1.2	235	3.4	178	3.6	W 64.8
4 22	−4.2	221	3.5	248	3.0	W 62.9
4 41	+2.2	178	3.6	235	3.4	W 60.0
5 1	−1.8	237	4.5	179	4.4	W 31.6
5 20	−1.6	265	4.1	319	3.3	W 62.0
5 38	+2.2	292	3.9	244	2.9	W 57.5
5 58	−3.0	275	3.3	302	4.3	W 36.0
6 16	−2.6	320	3.2	383	3.8	W 49.1
6 33	−1.4	387	1.9	330	1.0	W 58.0
6 52	−3.2	520	4.6	460	1.9	O 49.8
6 57	−1.6	330	1.0	387	1.9	W 55.5
7 17	+1.4	599	2.0	576	3.3	O 51.5
7 34	−2.6	402	4.6	379	2.9	W 33.2
8 0	−2.2	599	2.0	648	3.4	O 59.6
8 38	+2.4	601	3.5	664	4.2	O 39.9
8 53	+2.2	664	4.2	601	3.5	O 40.4
9 6	−2.0	494	4.0	533	4.4	W 58.0
9 27	+1.0	745	3.5	708	3.0	O 53.9
9 39	−2.0	537	3.3	502	3.4	W 41.0
9 52	−3.6	557	3.7	601	3.5	W 40.0
10 6	+3.0	748	2.3	762	3.0	O 45.1
10 20	+1.4	786	2.8	748	2.3	O 47.0
10 38	+2.8	762	3.0	748	2.3	O 48.1
10 52	−1.8	599	2.0	647	3.4	W 58.8
11 5	+3.0	748	2.3	792	2.6	O 48.7
11 23	+2.4	792	2.6	748	2.3	O 49.7
11 41	+2.0	827	4.3	818	2.8	O 61.9
11 54	−3.2	664	4.2	702	1.8	W 40.4
12 9	−2.2	748	2.3	710	4.3	W 49.6
12 29	−0.8	872	2.8	827	4.3	O 70.0

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
12 37	+3.4	792	2.6	740	3.8	W 53.2
12 50	−2.8	696	4.9	730	3.6	W 32.2
13 3	−0.8	791	4.3	734	4.4	W 61.1
13 21	−1.4	748	2.3	719	3.6	W 46.0
13 36	+1.6	1017	2.6	979	3.2	O 41.2
13 55	+1.4	952	3.3	1000	3.3	O 59.8
14 5	+2.6	967	2.5	952	3.3	O 61.6
14 24	+2.8	1019	3.8	1051	1.2	O 41.7
14 36	+2.0	1063	2.6	1036	3.6	O 52.3
14 53	+2.4	966	3.2	1000	3.3	O 69.8
15 23	−1.6	866	1.8	843	1.1	W 49.0
15 41	+1.0	1069	3.3	1134	2.8	O 61.8
16 1	+0.8	1134	2.8	1069	3.3	O 63.9
16 21	+2.2	1175	1.9	1132	4.9	O 34.2
16 41	−2.2	979	3.2	953	3.4	W 42.4
16 46	+3.4	1146	3.6	1182	2.8	O 45.4
17 9	+2.8	1182	2.8	1146	3.6	O 46.5
17 27	−2.4	1196	4.7	1259	3.0	O 61.0
17 45	+1.0	1251	3.3	1193	1.0	O 63.8
18 5	−3.4	1092	2.4	1131	3.6	W 56.8
18 24	−2.4	1146	3.6	1105	3.2	W 46.6
18 32	−1.6	1151	2.3	1092	2.4	W 51.6
18 46	+1.6	1148	3.4	1098	3.0	W 63.0
19 6	−0.8	1193	1.0	1134	2.8	W 64.2
19 21	+1.4	1352	1.3	1407	2.9	O 55.1
19 40	−1.8	1193	1.0	1174	3.2	W 61.5
19 47	−2.4	1240	3.0	1175	1.9	W 36.2
20 4	+3.0	1434	3.0	1409	3.1	O 32.6
20 42	−1.4	1283	2.8	1227	3.2	W 56.5
20 51	−2.6	1523	2.4	1483	4.8	O 57.4
21 10	−1.4	1227	3.2	1283	2.8	W 52.8
21 25	−2.6	1407	2.9	1457	4.3	O 70.0
21 41	−2.4	1299	4.6	1361	3.5	W 41.0
21 59	−1.6	1325	2.3	1308	3.1	W 56.1
22 12	−1.2	1352	1.3	1308	3.1	W 53.4
22 22	−4.0	1358	3.6	1373	3.9	W 55.8
22 57	+1.6	42	4.7	85	3.4	O 50.0
23 24	−1.4	1459	3.4	1398	4.3	W 44.0
23 44	−2.4	1460	4.8	1434	3.0	W 30.4
23 52	−1.2	1449	2.9	1520	3.5	W 58.9

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 11	−1.4	1473	3.7	1520	3.5	W 57.4
0 15	+1.2	131	2.1	165	3.9	O 54.8
0 41	−1.6	4	2.2	1531	3.7	W 45.5
0 58	−1.8	1531	3.7	4	2.2	W 44.4
1 10	+0.8	189	2.5	131	2.1	O 61.4
1 20	+1.2	235	3.4	190	3.0	O 47.7
1 41	+1.4	190	3.0	251	3.0	O 48.6
2 1	+1.4	251	3.0	190	3.0	O 50.3
2 21	+3.6	36	3.2	85	3.4	W 60.8
2 31	+2.4	251	3.0	230	3.0	O 55.2
2 52	−1.4	86	2.7	39	2.2	W 41.6
3 10	−1.6	309	2.7	251	3.0	O 60.4
3 29	+1.0	299	3.8	248	3.0	O 64.6
3 46	+2.0	329	1.0	373	2.1	O 54.0
4 0	−4.4	319	3.3	292	3.9	O 60.4
4 19	+1.6	221	3.5	178	3.6	W 62.8
4 25	−0.8	248	3.0	189	2.5	W 63.5
4 47	−1.0	189	2.5	248	3.0	W 61.0
4 52	+2.2	178	3.6	235	3.4	W 57.9
5 12	−1.6	265	4.1	319	3.3	W 63.0
5 28	−3.0	292	3.9	329	1.0	W 58.0
5 43	−3.4	275	3.3	302	4.3	W 37.2
6 3	−2.6	320	3.2	383	3.8	W 50.2
6 12	−1.6	319	3.3	299	3.8	W 59.2
6 26	−1.4	387	1.9	330	1.0	W 58.8
6 40	−1.2	329	1.0	299	3.8	W 53.3
6 49	−1.8	330	1.0	387	1.9	W 56.5
7 10	−4.8	569	2.9	523	2.8	O 50.0
7 24	+1.4	599	2.0	576	3.3	O 52.7
7 43	−2.8	379	2.9	402	4.6	W 32.8
8 35	−1.0	648	3.4	599	2.0	O 65.2
8 50	+2.6	601	3.5	664	4.2	O 40.6
8 56	−2.0	494	4.0	533	4.4	W 59.1
9 14	+1.2	734	4.4	708	3.0	O 52.9
9 32	+1.0	745	3.5	708	3.0	O 55.0
9 52	−2.0	502	3.4	537	3.3	W 40.1
10 3	−1.8	537	3.3	523	2.8	W 40.2
10 21	+3.6	748	2.3	762	3.0	O 46.8
10 27	+1.6	786	2.8	748	2.3	O 48.0
10 44	+2.4	792	2.6	766	3.4	O 44.6
10 59	+2.8	818	2.8	827	4.3	O 55.2
11 16	+2.6	816	1.7	838	3.1	O 44.4
11 32	+2.4	839	2.9	793	3.6	O 33.8
11 46	−1.4	827	4.3	872	2.8	O 62.5
12 4	+1.2	852	3.3	818	2.8	O 64.3
12 17	−2.6	730	3.6	696	4.9	W 34.1
12 36	−2.8	696	4.9	730	3.6	W 33.2
12 54	+3.8	792	2.6	740	3.8	W 52.1
13 14	−1.4	748	2.3	719	3.6	W 47.0
13 34	+3.8	952	3.3	967	2.5	O 58.0
13 51	−2.6	816	1.7	792	2.6	W 46.5
14 10	−1.6	818	2.8	801	3.5	W 60.2
14 23	+1.0	1000	3.3	952	3.3	O 63.1
14 38	+3.2	1019	3.8	1051	1.2	O 43.1
14 46	+1.8	1063	2.6	1036	3.6	O 53.8
15 3	+2.8	1051	1.2	1019	3.8	O 44.8
15 15	−1.6	866	1.8	843	1.1	W 50.0
15 46	+0.8	1069	3.3	1134	2.8	O 62.6
16 5	+0.6	1134	2.8	1069	3.3	O 64.8
16 18	−1.6	944	2.0	883	2.1	W 28.8
16 30	−2.4	979	3.2	953	3.4	W 43.4
16 43	−1.2	952	3.3	932	3.7	W 55.4
17 3	+3.6	1146	3.6	1182	2.8	O 46.6
17 23	+3.0	1182	2.8	1146	3.6	O 47.4
17 35	−1.0	1003	3.5	1069	3.3	W 61.6
17 50	+0.8	1251	3.3	1193	1.0	O 64.7
18 10	−3.6	1073	2.3	1094	3.0	W 37.4
18 30	−3.2	1105	3.2	1146	3.6	W 46.6
18 48	−1.8	1119	2.7	1092	2.4	W 48.9
19 2	−0.8	1193	1.0	1134	2.8	W 65.1
19 17	−2.0	1185	3.6	1118	1.7	W 31.2
19 35	−2.4	1240	3.0	1175	1.9	W 37.0
19 51	+1.2	1407	2.9	1352	1.3	O 58.6
20 6	+1.0	1490	3.9	1431	4.3	O 51.1
20 19	−2.0	1174	3.2	1193	1.0	W 55.1
20 35	−1.2	1283	2.8	1227	3.2	W 57.8
20 53	−2.6	1466	4.2	1523	2.4	O 60.0
21 12	−3.0	1407	2.9	1457	4.3	O 69.0
21 29	−2.6	1299	4.6	1361	3.5	W 41.9
21 44	+1.8	1581	4.4	1510	3.5	O 38.0
22 3	+4.0	1378	4.2	1325	2.3	W 54.5
22 20	+1.4	39	2.2	4	2.2	O 42.4
23 5	+1.6	42	4.7	85	3.4	O 51.4
23 17	−1.4	1459	3.4	1398	4.3	W 45.1
23 32	+1.4	85	3.4	42	4.7	O 54.8
23 52	−2.6	1434	3.0	1460	4.8	W 30.2

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 3	− 1.6	71	2.1	15	3.5	O 65.6	11 39	− 1.6	827	4.3	872	2.8	O 60.8
0 21	+ 1.4	131	2.1	165	3.9	O 55.8	11 59	− 3.6	710	4.3	748	2.3	W 50.6
0 33	− 1.6	4	2.2	1531	3.7	W 46.0	12 10	+ 1.2	852	3.3	818	2.8	O 65.2
0 53	+ 1.0	131	2.1	189	2.5	O 59.7	12 22	− 3.4	696	4.9	730	3.6	W 34.2
1 5	− 1.6	134	3.0	85	3.4	O 66.3	12 45	+ 1.4	932	3.7	912	2.9	O 58.6
1 14	+ 0.8	189	2.5	131	2.1	O 62.2	12 54	− 1.0	791	4.3	734	4.4	W 62.6
1 26	+ 1.2	235	3.4	190	3.0	O 48.6	13 13	− 2.0	816	1.7	762	3.0	W 48.3
1 45	+ 2.4	55	3.9	116	3.5	W 64.2	13 32	− 2.6	762	3.0	816	1.7	W 47.3
1 49	+ 1.4	85	3.4	36	3.2	W 65.4	13 51	+ 1.6	1017	2.6	979	3.2	O 43.2
2 8	+ 2.2	211	1.9	251	3.0	O 52.7	14 9	+ 1.6	952	3.3	1000	3.3	O 62.0
2 16	− 2.4	85	3.4	131	2.1	W 62.5	14 28	+ 1.2	1000	3.3	952	3.3	O 63.8
2 31	+ 1.8	251	3.0	211	1.9	O 54.8	14 32	− 1.6	816	1.7	786	2.8	W 44.2
2 45	− 1.4	86	2.7	39	2.2	W 42.6	14 54	+ 3.8	1019	3.8	1051	1.2	O 44.5
3 2	− 1.6	309	2.7	251	3.0	O 59.5	15 10	− 1.2	866	1.8	827	4.3	W 51.0
3 22	+ 4.0	319	3.3	330	1.0	O 56.2	15 23	+ 1.4	1100	3.1	1134	2.8	O 57.4
3 37	+ 2.4	292	3.9	260	4.0	O 57.2	15 31	− 1.4	885	3.4	838	3.1	W 38.0
3 56	+ 2.0	329	1.0	373	2.1	O 55.6	15 50	+ 1.0	1069	3.3	1134	2.8	O 63.4
4 14	− 1.4	230	3.0	183	3.7	W 56.5	16 10	− 1.8	944	2.0	883	2.1	W 29.5
4 27	+ 1.6	221	3.5	178	3.6	W 61.2	16 22	+ 2.2	1158	3.0	1094	3.0	O 38.8
4 44	− 1.6	211	1.9	183	3.7	W 51.2	16 37	− 1.2	952	3.3	932	3.7	W 56.5
5 4	− 1.8	265	4.1	319	3.3	W 63.8	16 44	+ 2.6	1175	1.9	1132	4.9	O 35.8
5 20	− 2.0	230	3.0	221	3.5	W 51.0	17 6	− 1.6	1069	3.3	1030	2.8	W 65.4
5 26	− 4.4	275	3.3	302	4.3	W 38.2	17 9	− 0.8	1069	3.3	1003	3.5	W 65.1
5 44	− 2.0	235	3.4	260	4.0	W 50.1	17 30	− 1.0	1003	3.5	1069	3.3	W 62.4
6 4	− 1.8	319	3.3	299	3.8	W 60.5	17 50	− 2.4	1019	3.8	1012	2.3	W 41.6
6 19	− 1.6	387	1.9	330	1.0	W 59.6	18 7	+ 1.8	1227	3.2	1193	1.0	O 65.9
6 34	− 1.4	329	1.0	299	3.8	W 54.4	18 27	− 1.6	1094	3.0	1051	1.2	W 37.6
6 40	− 2.0	330	1.0	387	1.9	W 57.8	18 41	− 1.4	1063	2.6	1119	2.7	W 49.2
7 6	− 2.4	387	1.9	373	2.1	W 56.3	19 1	+ 1.6	1148	3.4	1098	3.0	W 60.0
7 7	− 3.0	402	4.6	379	2.9	W 34.8	19 21	− 2.4	1118	1.7	1185	3.6	W 31.4
7 28	+ 1.4	599	2.0	569	2.9	O 53.2	19 35	+ 1.6	1352	1.3	1407	2.9	O 56.7
7 36	− 1.2	387	1.9	361	1.6	W 53.2	19 42	+ 2.2	1137	3.3	1196	4.7	W 59.4
7 51	+ 3.2	434	1.0	388	2.7	W 54.0	19 57	+ 1.2	1407	2.9	1352	1.3	O 59.3
8 25	− 1.6	444	4.6	414	2.0	W 43.0	20 15	+ 4.4	1409	3.1	1434	3.0	O 33.7
8 30	− 1.2	648	3.4	599	2.0	O 64.3	20 35	+ 4.0	1434	3.0	1409	3.1	O 34.4
8 46	− 2.2	494	4.0	533	4.4	W 60.2	20 52	+ 2.6	1516	1.2	1510	3.5	O 36.4
9 3	+ 3.0	601	3.5	664	4.2	O 41.4	21 0	− 1.0	1251	3.3	1325	2.3	W 62.6
9 20	− 2.0	537	3.3	502	3.4	W 42.8	21 17	− 1.6	1457	4.3	1407	2.9	O 69.0
9 37	+ 1.0	745	3.5	708	3.0	O 55.8	21 36	+ 2.0	1510	3.5	1581	4.4	O 38.0
9 54	− 2.2	537	3.3	523	2.8	W 41.2	21 53	+ 1.8	1581	4.4	1510	3.5	O 38.8
10 11	+ 1.8	748	2.3	786	2.8	O 46.4	22 0	− 1.2	1352	1.3	1308	3.1	W 55.5
10 27	+ 2.8	766	3.4	792	2.6	O 43.2	22 27	+ 1.6	39	2.2	4	2.2	O 43.4
10 39	+ 4.6	748	2.3	762	3.0	O 48.6	23 10	− 1.4	1459	3.4	1398	4.3	W 45.8
10 56	+ 2.4	792	2.6	766	3.4	O 45.8	23 21	− 1.0	1520	3.5	1449	2.9	W 62.8
11 8	+ 3.6	762	3.0	748	2.3	O 50.4	23 40	− 1.2	1449	2.9	1520	3.5	W 60.8
11 20	− 4.8	664	4.2	702	1.8	W 42.4	23 57	+ 2.0	116	3.5	99	3.6	O 52.5

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°
0 2	− 1.4	1520	3.5	1490	3.9	W 60.2
0 7	+ 2.0	116	3.5	99	3.6	O 53.8
0 23	− 4.2	85	3.4	134	3.0	O 62.1
0 39	− 2.8	1510	3.5	1516	1.2	W 36.5
0 58	+ 1.0	131	2.1	189	2.5	O 60.6
1 18	+ 0.8	189	2.5	131	2.1	O 63.0
1 32	+ 1.4	235	3.4	190	3.0	O 49.3
1 55	+ 1.4	211	1.9	265	4.1	O 52.1
2 14	+ 1.4	251	3.0	190	3.0	O 51.8
2 25	− 3.0	174	4.0	234	3.9	O 59.9
2 40	+ 2.0	251	3.0	211	1.9	O 55.7
2 56	+ 3.0	251	3.0	230	3.0	O 57.4
3 16	+ 1.2	361	1.6	329	1.0	O 52.5
3 32	+ 3.4	260	4.0	292	3.9	O 57.2
3 50	+ 1.4	350	2.2	319	3.3	O 61.2
4 6	+ 2.4	329	1.0	373	2.1	O 56.9
4 26	+ 3.6	330	1.0	319	3.3	O 63.9
4 37	− 1.0	189	2.5	248	3.0	W 62.8
4 57	− 3.6	330	1.0	388	2.7	O 66.0
5 10	− 2.0	230	3.0	221	3.5	W 52.5
5 34	− 2.2	235	3.4	260	4.0	W 51.7
5 55	− 1.8	319	3.3	299	3.8	W 61.8
6 11	− 1.6	387	1.9	330	1.0	W 60.2
6 30	− 2.0	330	1.0	387	1.9	W 59.0
6 44	+ 2.6	434	1.0	387	1.9	W 58.0
7 4	+ 1.6	569	2.9	599	2.0	O 50.2
7 12	− 3.8	379	2.9	402	4.6	W 34.8
7 30	− 1.4	387	1.9	361	1.6	W 54.2
7 39	+ 1.8	599	2.0	576	3.3	O 55.1
7 56	− 1.8	414	2.0	473	3.5	W 48.9
8 17	− 1.6	444	4.6	414	2.0	W 43.9
8 35	− 2.4	494	4.0	533	4.4	W 61.2
9 10	− 2.2	537	3.3	502	3.4	W 43.6
9 31	− 2.6	502	3.4	537	3.3	W 42.3
9 43	− 2.2	537	3.3	523	2.8	W 42.2
10 11	+ 3.0	762	3.0	766	3.4	O 43.1
10 31	+ 1.6	801	3.5	791	4.3	O 54.9
10 44	+ 1.8	786	2.8	748	2.3	O 50.0
11 8	+ 3.0	792	2.6	766	3.4	O 46.8
11 29	+ 3.6	818	2.8	827	4.3	O 60.2
11 48	− 3.6	730	3.6	696	4.9	W 35.6
12 8	+ 3.2	838	3.1	816	1.7	O 48.6
12 17	− 0.8	872	2.8	827	4.3	O 67.7
12 49	− 0.8	791	4.3	734	4.4	W 63.2
13 3	− 2.4	816	1.7	762	3.0	W 48.9
13 19	− 2.8	762	3.0	816	1.7	W 48.3
13 36	+ 2.0	979	3.2	1017	2.6	O 42.0
13 51	+ 2.4	979	3.2	1012	2.3	O 43.0
14 6	+ 0.8	1003	3.5	952	3.3	O 63.1
14 25	+ 2.6	1036	3.6	1063	2.6	O 51.2
14 36	+ 2.8	1051	1.2	1050	2.7	O 40.7
14 59	− 1.6	866	1.8	843	1.1	W 52.5
15 6	+ 2.2	1063	2.6	1036	3.6	O 56.5
15 24	− 1.6	885	3.4	838	3.1	W 38.8
15 39	+ 1.4	1148	3.4	1119	2.7	O 48.2
15 57	+ 1.4	1131	3.6	1174	3.2	O 53.1
16 16	− 2.0	883	2.1	944	2.0	W 29.5
16 33	+ 2.2	1158	3.0	1094	3.0	O 39.5
16 58	− 1.6	1069	3.3	1030	2.8	W 65.9
17 5	− 0.8	1069	3.3	1003	3.5	W 65.6
17 25	− 1.0	1003	3.5	1069	3.3	W 63.5
17 42	− 1.2	1259	3.0	1196	4.7	O 62.6
18 1	+ 1.2	1308	3.1	1283	2.8	O 54.8
18 19	− 1.8	1094	3.0	1051	1.2	W 38.4
18 38	− 1.8	1051	1.2	1094	3.0	W 37.2
18 56	− 1.4	1146	3.6	1092	2.4	W 47.0
19 13	− 1.0	1134	2.8	1193	1.0	W 64.3
19 20	− 3.4	1175	1.9	1240	3.0	W 38.0
19 43	+ 1.8	1352	1.3	1407	2.9	O 58.4
20 3	+ 1.4	1407	2.9	1352	1.3	O 60.0
20 23	− 1.4	1283	2.8	1227	3.2	W 59.4
20 41	− 1.2	1243	3.8	1196	4.7	W 48.6
20 55	− 1.0	1251	3.3	1325	2.3	W 63.5
21 9	− 1.6	1457	4.3	1407	2.9	O 68.5
21 21	− 1.4	1523	2.4	1466	4.2	O 64.2
21 40	+ 2.8	1357	2.4	1407	2.9	W 67.7
21 54	− 1.2	1352	1.3	1308	3.1	W 56.4
22 2	+ 1.8	1581	4.4	1510	3.5	O 39.4
22 35	+ 1.6	39	2.2	4	2.2	O 44.4
23 3	− 1.4	1459	3.4	1398	4.3	W 46.6
23 21	+ 1.8	42	4.7	85	3.4	O 53.9
23 34	− 1.2	1449	2.9	1520	3.5	W 61.9
23 46	− 1.6	1459	3.4	1428	2.8	W 44.0

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	m h	m					°
0 16	+2.0	127	3.9	86	2.7	O 45.1	12 21	+1.2	852	3.3	818	2.8	O 66.7
0 35	+1.6	131	2.1	165	3.9	O 58.5	12 45	−1.0	791	4.3	734	4.4	W 63.9
0 48	−1.8	134	3.0	85	3.4	O 64.7	13 5	−3.2	762	3.0	816	1.7	W 49.2
1 4	+1.2	165	3.9	131	2.1	O 62.2	13 22	−3.2	766	3.4	762	3.0	W 46.4
1 22	+0.8	189	2.5	131	2.1	O 63.5	13 33	−1.4	801	3.5	854	4.9	W 68.3
1 39	+1.4	235	3.4	190	3.0	O 50.5	13 46	+1.8	979	3.2	1017	2.6	O 43.2
1 50	+1.8	116	3.5	55	3.9	W 63.2	14 3	+2.4	979	3.2	1012	2.3	O 44.2
2 10	+3.2	55	3.9	116	3.5	W 62.0	14 15	−1.8	816	1.7	786	2.8	W 46.4
2 30	−1.6	86	2.7	39	2.2	W 44.4	14 29	+2.6	889	4.2	854	4.9	W 63.5
2 50	+2.0	251	3.0	211	1.9	O 56.2	14 40	+1.2	1000	3.3	952	3.3	O 65.2
3 8	+3.4	174	4.0	131	2.1	W 58.9	14 51	−1.8	866	1.8	843	1.1	W 53.5
3 22	+1.4	361	1.6	329	1.0	O 53.7	15 16	−1.6	885	3.4	838	3.1	W 39.7
3 39	+1.8	319	3.3	361	1.6	O 59.3	15 21	−2.0	843	1.1	866	1.8	W 49.9
3 57	+1.4	350	2.2	319	3.3	O 62.2	15 38	+1.6	1100	3.1	1134	2.8	O 60.2
4 13	−1.0	248	3.0	189	2.5	W 65.6	15 54	+1.0	1174	3.2	1119	2.7	O 49.9
4 32	−1.2	189	2.5	248	3.0	W 63.6	16 12	−4.0	953	3.4	979	3.2	W 45.3
4 43	+1.8	221	3.5	178	3.6	W 58.6	16 31	+1.2	1174	3.2	1131	3.6	O 57.9
5 1	+2.0	383	3.8	434	1.0	O 50.6	16 50	−1.8	1069	3.3	1030	2.8	W 66.8
5 17	+1.8	434	1.0	383	3.8	O 51.4	17 1	−0.8	1069	3.3	1003	3.5	W 66.3
5 23	−2.4	235	3.4	260	4.0	W 53.2	17 20	−1.2	1003	3.5	1069	3.3	W 64.2
5 46	−1.8	319	3.3	299	3.8	W 63.0	17 39	−2.8	1259	3.0	1227	3.2	O 62.4
6 3	−1.6	387	1.9	330	1.0	W 60.9	17 50	−1.2	1227	3.2	1297	3.6	O 62.5
6 20	−2.0	330	1.0	387	1.9	W 60.0	18 10	−1.8	1094	3.0	1051	1.2	W 39.2
6 24	−2.6	299	3.8	319	3.3	W 57.9	18 29	−2.0	1051	1.2	1094	3.0	W 38.0
6 41	−3.0	387	1.9	373	2.1	W 59.3	18 49	−1.6	1146	3.6	1092	2.4	W 47.6
6 57	+2.8	434	1.0	387	1.9	W 57.1	19 8	−1.0	1134	2.8	1193	1.0	W 65.2
7 17	+2.0	576	3.3	599	2.0	O 52.4	19 19	+1.2	1196	4.7	1137	3.3	W 62.8
7 23	−1.4	387	1.9	361	1.6	W 55.4	19 43	−3.0	1174	3.2	1193	1.0	W 61.5
7 43	+1.6	599	2.0	569	2.9	O 55.2	19 52	+1.6	1352	1.3	1407	2.9	O 59.5
7 48	+1.8	599	2.0	576	3.3	O 56.0	20 10	+1.2	1407	2.9	1352	1.3	O 60.6
8 9	−1.8	444	4.6	414	2.0	W 45.0	20 29	+3.8	1321	3.1	1283	2.8	W 58.6
8 23	−2.8	494	4.0	533	4.4	W 62.2	20 40	−1.6	1227	3.2	1283	2.8	W 57.8
8 40	+1.8	690	3.2	666	4.8	O 45.7	20 55	+4.0	1358	3.6	1325	2.3	W 64.2
8 59	−2.4	537	3.3	502	3.4	W 44.5	21 14	−1.4	1523	2.4	1466	4.2	O 62.9
9 18	−2.6	502	3.4	537	3.3	W 43.5	21 31	+1.4	1407	2.9	1357	2.4	W 68.0
9 32	−2.4	537	3.3	523	2.8	W 43.4	21 48	−1.2	1352	1.3	1308	3.1	W 57.6
9 47	+1.0	745	3.5	708	3.0	O 57.6	21 56	+2.4	1510	3.5	1581	4.4	O 39.5
10 6	−1.2	576	3.3	536	3.6	W 55.5	22 11	+2.0	1581	4.4	1510	3.5	O 40.2
10 26	+3.4	762	3.0	766	3.4	O 44.8	22 21	+2.0	4	2.2	39	2.2	O 43.4
10 39	+1.8	801	3.5	791	4.3	O 56.4	22 43	+1.8	39	2.2	4	2.2	O 45.3
10 58	+3.8	766	3.4	792	2.6	O 46.3	22 56	−1.6	1459	3.4	1398	4.3	W 47.2
11 23	+3.4	792	2.6	766	3.4	O 48.0	23 16	−4.0	15	3.5	71	2.1	O 60.9
11 41	+2.2	791	4.3	827	4.3	O 62.2	23 30	+2.0	42	4.7	85	3.4	O 55.2
12 0	+1.8	818	2.8	852	3.3	O 64.5	23 47	−1.8	71	2.1	15	3.5	O 64.0
12 13	−1.0	872	2.8	827	4.3	O 66.5	23 54	+2.4	86	2.7	127	3.9	O 43.4

Frühlingspunkts-Orts-Zeit		Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern		2. Stern		Höhe
h	m	m	Nr.	Gr.	Nr.	Gr.	°
0	1	+1.6	85	3.4	42	4.7	O 58.2
0	8	−3.8	1510	3.5	1516	1.2	W 39.0
0	28	+2.4	116	3.5	99	3.6	O 56.3
0	43	+1.6	131	2.1	165	3.9	O 59.7
1	8	+1.0	131	2.1	189	2.5	O 62.4
1	28	+1.4	221	3.5	190	3.0	O 50.1
1	46	+1.4	235	3.4	190	3.0	O 51.3
1	59	+1.6	116	3.5	55	3.9	W 62.6
2	19	−2.0	234	3.9	174	4.0	O 59.1
2	36	−1.8	309	2.7	251	3.0	O 55.4
2	45	+2.8	211	1.9	251	3.0	O 56.2
3	15	+1.4	350	2.2	329	1.0	O 53.4
3	33	+2.4	330	1.0	329	1.0	O 55.5
3	52	−1.6	230	3.0	183	3.7	W 58.9
4	8	−0.8	248	3.0	189	2.5	W 66.4
4	26	−1.0	189	2.5	248	3.0	W 64.8
4	38	+1.2	235	3.4	178	3.6	W 59.5
4	52	+1.8	221	3.5	178	3.6	W 56.5
5	11	+2.2	383	3.8	434	1.0	O 51.3
5	26	+1.8	434	1.0	383	3.8	O 52.0
5	37	−1.8	319	3.3	299	3.8	W 64.0
6	10	−2.0	330	1.0	387	1.9	W 61.1
6	26	−3.2	387	1.9	373	2.1	W 60.6
6	46	−1.6	299	3.8	329	1.0	W 53.2
7	11	+3.2	434	1.0	387	1.9	W 56.1
7	27	+2.0	576	3.3	599	2.0	O 54.0
7	51	+1.6	599	2.0	569	2.9	O 56.1
8	0	−1.8	444	4.6	414	2.0	W 46.0
8	12	−1.2	648	3.4	599	2.0	O 60.9
8	25	−2.0	414	2.0	444	4.6	W 43.6
8	47	−2.4	537	3.3	502	3.4	W 45.4
9	5	−2.8	502	3.4	537	3.3	W 44.4
9	23	+1.2	708	3.0	745	3.5	O 54.4
9	38	+1.2	734	4.4	708	3.0	O 57.2
9	52	+1.0	745	3.5	708	3.0	O 58.6
10	3	−2.4	603	4.5	557	3.7	W 36.0
10	17	−2.6	557	3.7	603	4.5	W 35.4
10	27	−1.4	536	3.6	576	3.3	W 52.9
10	43	+3.8	762	3.0	766	3.4	O 46.4
11	3	+1.8	786	2.8	748	2.3	O 51.7
11	40	+3.8	792	3.6	766	3.4	O 48.6
12	0	+2.2	882	3.4	885	3.4	O 38.2
12	10	+1.8	827	4.3	791	4.3	O 64.5
12	27	+1.4	852	3.3	818	2.8	O 67.2
12	44	−1.8	701	2.3	690	3.2	W 44.8
12	55	−1.2	734	4.4	791	4.3	W 63.2
13	8	+1.6	932	3.7	912	2.9	O 63.0
13	35	−2.0	818	2.8	801	3.5	W 65.8
13	55	+2.0	979	3.2	1017	2.6	O 44.2
14	15	+2.6	979	3.2	1012	2.3	O 45.4
14	33	+1.6	952	3.3	1000	3.3	O 65.1
14	53	+3.2	1036	3.6	1063	2.6	O 55.3
15	11	−2.0	843	1.1	866	1.8	W 51.2
15	29	+2.6	1063	2.6	1036	3.6	O 59.0
15	46	+1.6	1100	3.1	1134	2.8	O 62.1
16	5	+1.0	1069	3.3	1134	2.8	O 66.3
16	22	+1.2	1134	2.8	1100	3.1	O 67.7
16	37	+1.2	1174	3.2	1131	3.6	O 58.6
16	57	−0.8	1069	3.3	1003	3.5	W 67.0
17	14	−1.0	1003	3.5	1069	3.3	W 65.4
17	33	−3.8	1050	2.7	1051	1.2	W 43.2
17	53	−1.6	1000	3.3	1036	3.6	W 52.8
18	8	−2.4	1119	2.7	1092	2.4	W 53.2
18	20	−1.6	1063	2.6	1119	2.7	W 52.1
18	34	−2.8	1092	2.4	1119	2.7	W 51.0
18	52	−2.0	1193	1.0	1174	3.2	W 67.5
19	3	−1.0	1134	2.8	1193	1.0	W 66.2
19	25	+1.2	1196	4.7	1137	3.3	W 61.9
19	28	−3.2	1174	3.2	1193	1.0	W 63.5
20	0	+1.6	1352	1.3	1407	2.9	O 60.5
20	19	−1.6	1240	3.0	1182	2.8	W 37.8
20	37	+1.8	1459	3.4	1514	3.2	O 45.4
20	52	−1.8	1457	4.3	1407	2.9	O 66.7
21	7	−1.4	1523	2.4	1466	4.2	O 61.8
21	25	−1.2	1283	2.8	1251	3.3	W 54.5
21	42	−1.2	1352	1.3	1308	3.1	W 58.7
22	8	+2.6	1510	3.5	1581	4.4	O 40.3
22	21	+2.4	1581	4.4	1510	3.5	O 40.7
22	31	+1.8	4	2.2	39	2.2	O 44.6
22	48	−1.6	1459	3.4	1398	4.3	W 48.1
23	7	−1.8	1398	4.3	1459	3.4	W 47.0
23	22	−1.2	1449	2.9	1520	3.5	W 63.4
23	41	−1.6	1473	3.7	1520	3.5	W 62.2

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr. Gr.	2. Stern Nr. Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr. Gr.	2. Stern Nr. Gr.	Höhe
h m	m			°	h m	m			°
0 4	+3.4	99 3.6	116 3.5	O 54.0	12 56	−2.0	719 3.6	748 2.3	W 49.9
0 18	+2.6	86 2.7	127 3.9	O 45.8	13 16	+1.6	932 3.7	912 2.9	O 64.2
0 36	+2.4	127 3.9	86 2.7	O 46.8	13 25	−2.0	818 2.8	801 3.5	W 67.0
0 51	+1.6	131 2.1	165 3.9	O 61.1	13 43	−3.6	889 4.2	952 3.3	O 62.5
1 3	−2.2	37 (2.2)	1596 4.5	W 50.7	13 57	−2.0	816 1.7	786 2.8	W 48.4
1 16	+1.2	165 3.9	131 2.1	O 64.0	14 7	+2.6	1017 2.6	1019 3.8	O 44.1
1 35	+1.6	221 3.5	190 3.0	O 51.0	14 26	+2.0	1017 2.6	979 3.2	O 46.8
1 53	+1.4	235 3.4	190 3.0	O 52.2	14 46	+1.4	1092 2.4	1050 2.7	O 42.6
2 13	−1.8	86 2.7	39 2.2	W 46.1	15 1	−2.6	843 1.1	866 1.8	W 52.8
2 33	−2.0	54 2.0	39 2.2	W 43.1	15 19	−2.0	838 3.1	885 3.4	W 40.0
2 37	+1.6	251 3.0	190 3.0	O 53.8	15 39	−2.8	885 3.4	882 3.4	W 39.4
2 58	+3.2	116 3.5	71 2.1	W 57.1	15 54	+1.8	1100 3.1	1134 2.8	O 63.5
3 21	−2.6	85 3.4	99 3.6	W 50.5	16 10	+1.0	1069 3.3	1134 2.8	O 67.0
3 40	+2.0	319 3.3	350 2.2	O 60.2	16 28	+1.2	1134 2.8	1100 3.1	O 68.8
3 59	−2.2	183 3.7	230 3.0	W 58.8	16 47	−3.4	1030 2.8	1069 3.3	W 67.7
4 11	+1.4	350 2.2	319 3.3	O 64.2	16 57	−4.0	1019 3.8	1012 2.3	W 46.9
4 24	+1.4	361 1.6	319 3.3	O 65.1	17 15	−1.4	1036 3.6	1000 3.3	W 58.2
4 44	+1.4	235 3.4	178 3.6	W 58.6	17 30	−1.0	1019 3.8	967 2.5	W 45.1
5 4	+2.0	451 1.5	402 4.6	O 37.0	17 45	−1.6	1000 3.3	1036 3.6	W 54.3
5 22	+2.4	383 3.8	434 1.0	O 52.3	18 4	−1.8	1036 3.6	1030 2.8	W 53.2
5 28	−2.2	319 3.3	299 3.8	W 65.1	18 21	+1.4	1308 3.1	1283 2.8	O 58.3
5 58	−3.4	299 3.8	319 3.3	W 61.9	18 36	+2.6	1148 3.4	1100 3.1	W 61.2
6 6	−1.4	329 1.0	299 3.8	W 58.9	18 53	−1.8	1092 2.4	1146 3.6	W 48.0
6 25	−3.2	329 1.0	330 1.0	W 57.0	19 5	+1.6	1398 4.3	1361 3.5	O 42.8
6 38	−1.8	299 3.8	329 1.0	W 54.7	19 14	+2.6	1260 3.9	1321 3.1	O 55.3
7 7	−1.4	387 1.9	350 2.2	W 58.1	19 31	+1.4	1196 4.7	1137 3.3	W 60.8
7 27	+4.2	434 1.0	387 1.9	W 54.8	20 2	−1.4	1283 2.8	1227 3.2	W 61.8
7 37	+2.4	576 3.3	599 2.0	O 55.3	20 21	−1.4	1243 3.8	1196 4.7	W 51.4
7 51	−2.0	444 4.6	414 2.0	W 47.0	20 41	−2.0	1240 3.0	1211 2.1	W 37.6
8 6	+2.0	599 2.0	576 3.3	O 58.4	21 0	−1.6	1523 2.4	1466 4.2	O 60.6
8 15	−2.0	414 2.0	444 4.6	W 45.0	21 19	−1.2	1283 2.8	1251 3.3	W 55.4
8 51	−3.8	502 3.4	537 3.3	W 45.4	21 36	−1.4	1352 1.3	1308 3.1	W 59.5
9 11	+1.6	719 3.6	701 2.3	O 46.4	21 46	+1.6	1407 2.9	1357 2.4	W 66.5
9 31	−3.6	523 2.8	537 3.3	W 43.8	22 6	−1.6	1308 3.1	1352 1.3	W 55.5
9 51	−2.8	603 4.5	557 3.7	W 36.6	22 21	+2.8	1510 3.5	1581 4.4	O 41.0
10 4	−3.0	557 3.7	603 4.5	W 36.3	22 40	+2.2	4 2.2	39 2.2	O 45.6
10 20	−1.4	536 3.6	576 3.3	W 54.2	22 58	−2.0	1398 4.3	1459 3.4	W 47.7
10 25	+2.0	786 2.8	766 3.4	O 45.8	23 16	−1.4	1449 2.9	1520 3.5	W 64.3
10 52	+2.6	748 2.3	786 2.8	O 51.0	23 33	−1.8	1473 3.7	1520 3.5	W 63.2
11 12	+2.2	786 2.8	748 2.3	O 52.4	23 50	+2.0	42 4.7	85 3.4	O 57.6
11 45	+1.4	842 2.2	889 4.2	O 47.5					
12 4	−1.0	872 2.8	827 4.3	O 64.7					
12 18	+1.8	818 2.8	852 3.3	O 67.0					
12 35	−2.0	701 2.3	690 3.2	W 46.0					
12 49	−1.2	734 4.4	791 4.3	W 64.3					

Frühlingspunkts-Orts-Zeit		Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern		2. Stern		Höhe
			Nr.	Gr.	Nr.	Gr.	
h	m	m					°
0	0	+ 2.2	42	4.7	85	3.4	O 58.8
0	19	− 2.2	134	3.0	85	3.4	O 61.2
0	31	+ 3.0	86	2.7	127	3.9	O 46.9
0	48	+ 2.6	127	3.9	86	2.7	O 47.5
0	54	+ 3.2	116	3.5	99	3.6	O 58.9
1	16	+ 1.8	190	3.0	221	3.5	O 49.2
1	35	+ 0.8	189	2.5	131	2.1	O 65.5
1	48	− 3.8	37	(2.2)	39	2.2	W 49.1
2	4	− 1.8	86	2.7	39	2.2	W 47.2
2	24	− 2.0	39	2.2	86	2.7	W 45.8
2	42	+ 1.4	265	4.1	211	1.9	O 57.5
3	8	− 2.8	85	3.4	99	3.6	W 52.5
3	29	+ 1.4	350	2.2	329	1.0	O 55.8
3	48	− 2.2	183	3.7	230	3.0	W 59.7
4	7	+ 2.0	319	3.3	361	1.6	O 63.6
4	27	− 1.0	211	1.9	165	3.9	W 55.2
4	31	+ 1.6	361	1.6	319	3.3	O 65.9
4	51	+ 1.4	235	3.4	178	3.6	W 57.1
5	14	+ 2.2	451	1.5	402	4.6	O 37.7
5	34	+ 2.6	383	3.8	434	1.0	O 53.1
5	54	+ 2.4	373	2.1	319	3.3	W 62.6
6	9	− 3.6	329	1.0	330	1.0	W 59.0
6	29	− 1.8	299	3.8	329	1.0	W 56.1
7	0	− 1.4	387	1.9	350	2.2	W 59.0
7	41	− 2.0	444	4.6	414	2.0	W 48.0
7	59	− 1.2	648	3.4	599	2.0	O 58.4
8	16	+ 2.0	599	2.0	576	3.3	O 59.3
8	51	− 3.8	537	3.3	523	2.8	W 46.2
9	9	+ 2.6	696	4.9	668	4.9	O 30.6
9	19	+ 1.8	719	3.6	701	2.3	O 47.4
9	35	+ 1.2	708	3.0	745	3.5	O 56.7
9	51	+ 1.4	734	4.4	708	3.0	O 59.2
10	2	+ 1.0	745	3.5	708	3.0	O 60.4
10	13	− 1.6	536	3.6	576	3.3	W 55.2
10	35	+ 2.0	786	2.8	766	3.4	O 47.0
10	53	+ 2.0	817	3.4	818	2.8	O 58.2
11	12	+ 1.4	843	1.1	816	1.7	O 47.6
11	23	+ 2.2	786	2.8	748	2.3	O 53.2
11	52	+ 1.4	842	2.2	889	4.2	O 48.6
11	59	− 0.8	872	2.8	827	4.3	O 63.5
12	13	+ 1.4	889	4.2	842	2.2	O 50.6
12	31	+ 2.2	912	2.9	932	3.7	O 56.7
12	46	− 2.4	719	3.6	748	2.3	W 51.0
13	15	− 2.2	818	2.8	801	3.5	W 68.2
13	25	− 4.8	889	4.2	952	3.3	O 60.6
13	47	− 2.2	816	1.7	786	2.8	W 49.7
14	2	+ 1.2	952	3.3	1003	3.5	O 63.6
14	21	− 2.2	866	1.8	843	1.1	W 56.7
14	36	+ 2.2	1017	2.6	979	3.2	O 47.7
14	53	+ 1.4	1092	2.4	1050	2.7	O 43.6
15	12	+ 4.0	889	4.2	854	4.9	W 58.4
15	30	− 3.0	883	2.1	944	2.0	W 32.6
15	37	+ 2.2	967	2.5	912	2.9	W 62.8
16	2	+ 2.0	1000	3.3	966	3.2	W 69.0
16	15	+ 1.0	1069	3.3	1134	2.8	O 67.7
16	34	+ 1.4	1134	2.8	1100	3.1	O 69.7
16	52	− 1.8	936	2.7	979	3.2	W 44.6
17	10	− 2.4	1050	2.7	1012	2.3	W 45.1
17	29	+ 3.4	1092	2.4	1036	3.6	W 56.4
17	48	− 1.4	1119	2.7	1063	2.6	W 55.0
18	4	− 1.6	1063	2.6	1119	2.7	W 54.1
18	18	+ 1.0	1251	3.3	1193	1.0	O 68.5
18	29	+ 2.2	1299	4.6	1240	3.0	O 39.8
18	49	+ 2.8	1148	3.4	1100	3.1	W 59.5
18	52	− 1.2	1134	2.8	1193	1.0	W 68.0
19	13	+ 1.8	1398	4.3	1361	3.5	O 43.8
19	38	+ 1.4	1196	4.7	1137	3.3	W 59.4
19	56	− 2.0	1185	3.6	1158	3.0	W 33.2
20	14	− 1.6	1243	3.8	1196	4.7	W 52.4
20	33	− 1.0	1251	3.3	1325	2.3	W 67.0
20	52	− 2.2	1211	2.1	1240	3.0	W 37.1
20	57	− 2.2	1325	2.3	1308	3.1	W 66.0
21	16	+ 1.8	1514	3.2	1459	3.4	O 49.0
21	29	− 1.4	1352	1.3	1308	3.1	W 60.6
21	45	− 3.0	1308	3.1	1325	2.3	W 59.5
21	58	− 1.6	1308	3.1	1352	1.3	W 56.7
22	31	− 1.8	1459	3.4	1398	4.3	W 49.6
22	51	+ 2.4	4	2.2	39	2.2	O 46.8
23	11	+ 2.2	39	2.2	4	2.2	O 48.0
23	27	+ 3.8	39	2.2	37	(2.2)	O 50.0
23	36	− 2.2	1428	2.8	1459	3.4	W 45.9

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 8	−2.4	134	3.0	85	3.4	O 59.4	14 1	−2.6	786	2.8	816	1.7	W 48.6
0 11	+2.6	42	4.7	85	3.4	O 59.6	14 12	+1.4	1063	2.6	1019	3.8	O 45.4
0 46	+3.8	86	2.7	127	3.9	O 47.8	14 29	+2.8	979	3.2	1017	2.6	O 47.6
1 2	−2.6	131	2.1	85	3.4	O 63.2	14 47	+2.4	1017	2.6	979	3.2	O 48.5
1 8	+1.8	131	2.1	165	3.9	O 63.9	15 0	+1.6	1092	2.4	1050	2.7	O 44.4
1 24	+1.2	131	2.1	189	2.5	O 65.2	15 15	−3.4	883	2.1	944	2.0	W 33.3
1 39	+0.8	189	2.5	131	2.1	O 66.0	15 31	+2.6	1105	3.2	1094	3.0	O 40.0
1 55	−2.0	86	2.7	39	2.2	W 47.9	15 51	+2.0	1119	2.7	1148	3.4	O 50.6
2 14	−2.2	39	2.2	86	2.7	W 46.6	16 3	+1.4	1174	3.2	1151	2.3	O 50.9
2 32	+1.8	211	1.9	265	4.1	O 56.9	16 23	−1.8	979	3.2	936	2.7	W 47.3
2 49	+1.4	265	4.1	211	1.9	O 58.5	16 43	−1.8	936	2.7	979	3.2	W 45.6
2 56	+1.8	320	3.2	302	4.3	O 39.1	17 1	−1.6	1036	3.6	1000	3.3	W 60.0
3 36	+1.6	350	2.2	329	1.0	O 56.9	17 19	−3.2	1012	2.3	1050	2.7	W 44.8
3 52	−2.2	211	1.9	183	3.7	W 57.9	17 34	−2.0	1050	2.7	1017	2.6	W 44.5
4 9	−1.2	189	2.5	248	3.0	W 67.5	17 46	−2.0	1036	3.6	1030	2.8	W 56.2
4 26	+1.6	350	2.2	319	3.3	O 66.3	18 6	−0.8	1297	3.6	1227	3.2	O 64.2
4 39	+1.6	361	1.6	319	3.3	O 67.0	18 25	+3.0	1240	3.0	1299	4.6	O 40.0
4 58	+1.6	235	3.4	178	3.6	W 55.7	18 40	+2.6	1299	4.6	1240	3.0	O 40.4
5 9	+2.6	402	4.6	451	1.5	O 37.8	19 0	+1.8	1378	4.2	1361	3.5	O 43.6
5 25	+2.4	451	1.5	402	4.6	O 38.4	19 11	+3.0	1227	3.2	1193	1.0	W 67.0
5 51	−1.6	329	1.0	299	3.8	W 61.0	19 22	+1.6	1398	4.3	1361	3.5	O 44.6
6 6	+2.6	373	2.1	319	3.3	W 61.8	19 34	−2.4	1151	2.3	1148	3.4	W 51.0
6 20	−2.0	299	3.8	329	1.0	W 57.8	19 53	−2.0	1240	3.0	1182	2.8	W 40.1
6 53	−1.6	387	1.9	350	2.2	W 60.1	20 8	−2.2	1182	2.8	1240	3.0	W 39.4
6 54	−1.6	387	1.9	361	1.6	W 60.2	20 28	−1.2	1251	3.3	1325	2.3	W 67.5
7 27	−1.8	350	2.2	387	1.9	W 55.2	20 46	−2.6	1325	2.3	1308	3.1	W 67.3
7 43	−3.2	402	4.6	411	2.9	W 36.7	21 6	+2.2	1459	3.4	1514	3.2	O 48.6
8 2	+3.0	576	3.3	599	2.0	O 58.4	21 25	+1.8	1514	3.2	1459	3.4	O 49.8
8 18	+2.0	599	2.0	569	2.9	O 59.2	21 30	−3.6	1308	3.1	1325	2.3	W 61.9
8 26	+2.2	599	2.0	576	3.3	O 60.2	21 50	−1.8	1308	3.1	1352	1.3	W 58.3
8 52	+2.6	666	4.8	690	3.2	O 47.7	22 9	+2.6	1596	4.5	4	2.2	O 45.2
9 6	+3.2	668	4.9	696	4.9	O 30.8	22 22	−1.8	1459	3.4	1398	4.3	W 50.2
9 25	+1.6	708	3.0	734	4.4	O 55.9	22 38	−2.2	1398	4.3	1459	3.4	W 49.6
9 41	+1.4	708	3.0	745	3.5	O 57.8	22 57	+1.4	37	(2.2)	85	3.4	O 47.7
9 58	+1.4	734	4.4	708	3.0	O 60.5	23 15	−2.0	1473	3.7	1520	3.5	W 65.6
10 16	+2.4	766	3.4	786	2.8	O 45.0	23 25	−2.4	1428	2.8	1459	3.4	W 47.2
10 45	+2.2	786	2.8	766	3.4	O 48.1	23 54	−2.2	1490	3.9	1520	3.5	W 62.4
11 3	+2.0	817	3.4	818	2.8	O 60.1							
11 19	+1.6	843	1.1	816	1.7	O 48.6							
11 55	−1.0	872	2.8	827	4.3	O 62.5							
12 14	−2.4	701	2.3	690	3.2	W 48.5							
12 34	−2.8	719	3.6	748	2.3	W 52.2							
12 43	−2.4	690	3.2	701	2.3	W 45.4							
13 33	+2.0	932	3.7	912	2.9	O 67.0							
13 42	−2.2	952	3.3	889	4.2	O 61.9							

Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlingspunkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 24	+ 2.8	42	4.7	85	3.4	O 60.5	13 25	− 2.4	816	1.7	786	2.8	W 51.5
0 49	− 2.8	131	2.1	85	3.4	O 62.4	13 43	+ 2.0	932	3.7	912	2.9	O 68.5
1 6	− 1.6	1570	3.3	1516	1.2	W 30.4	13 58	− 2.6	866	1.8	843	1.1	W 58.8
1 17	+ 2.0	131	2.1	165	3.9	O 65.2	14 18	− 3.6	843	1.1	866	1.8	W 57.6
1 36	+ 1.4	165	3.9	131	2.1	O 66.5	14 33	− 2.0	885	3.4	838	3.1	W 43.4
1 45	− 2.0	86	2.7	39	2.2	W 48.6	14 50	+ 4.0	1017	2.6	1019	3.8	O 48.4
2 3	− 2.4	39	2.2	86	2.7	W 47.6	15 8	+ 1.6	1092	2.4	1050	2.7	O 45.4
2 16	+ 1.6	235	3.4	190	3.0	O 55.0	15 44	+ 2.8	1105	3.2	1094	3.0	O 41.1
2 36	+ 2.2	116	3.5	55	3.9	W 58.5	16 1	+ 2.8	967	2.5	912	2.9	W 59.8
2 56	+ 1.4	265	4.1	211	1.9	O 59.0	16 21	+ 1.2	1174	3.2	1119	2.7	O 54.5
3 5	+ 2.0	320	3.2	302	4.3	O 40.0	16 34	− 2.0	936	2.7	979	3.2	W 46.6
3 23	+ 1.8	329	1.0	361	1.6	O 54.6	16 53	− 1.6	1036	3.6	1000	3.3	W 61.0
3 41	− 2.2	211	1.9	183	3.7	W 58.7	17 13	− 1.2	1019	3.8	967	2.5	W 47.6
3 59	+ 1.6	361	1.6	329	1.0	O 59.7	17 31	− 3.2	1051	1.2	1094	3.0	W 42.4
4 16	− 1.2	211	1.9	165	3.9	W 57.0	17 48	− 2.4	1017	2.6	1050	2.7	W 43.7
4 34	+ 1.8	350	2.2	319	3.3	O 67.3	18 7	− 1.8	1146	3.6	1092	2.4	W 51.6
4 41	− 1.2	165	3.9	211	1.9	W 53.8	18 23	− 2.2	1092	2.4	1146	3.6	W 50.8
5 5	+ 3.6	411	2.9	402	4.6	O 38.4	18 43	+ 1.6	1308	3.1	1283	2.8	O 61.6
5 22	+ 2.8	402	4.6	451	1.5	O 38.6	18 49	− 2.8	1094	3.0	1105	3.2	W 40.0
5 37	+ 2.4	451	1.5	402	4.6	O 39.1	19 9	+ 1.8	1378	4.2	1361	3.5	O 44.6
5 43	− 1.6	329	1.0	299	3.8	W 61.9	19 26	+ 3.2	1227	3.2	1193	1.0	W 65.8
6 10	− 2.2	299	3.8	329	1.0	W 59.1	19 43	− 2.2	1240	3.0	1182	2.8	W 40.8
6 19	+ 3.0	373	2.1	319	3.3	W 60.2	19 59	− 1.6	1243	3.8	1196	4.7	W 54.4
6 45	− 1.4	387	1.9	350	2.2	W 61.2	20 12	− 2.4	1457	4.3	1407	2.9	O 60.5
6 46	− 1.6	387	1.9	361	1.6	W 61.4	20 28	− 2.6	1211	2.1	1240	3.0	W 39.1
7 16	− 2.8	533	4.4	494	4.0	O 62.0	20 48	+ 1.0	1490	3.9	1431	4.3	O 58.4
7 27	− 4.0	402	4.6	411	2.9	W 37.8	21 8	+ 2.0	1531	3.7	1510	3.5	O 40.6
7 41	− 2.8	414	2.0	444	4.6	W 48.4	21 17	+ 2.2	1459	3.4	1514	3.2	O 49.8
8 6	+ 2.8	569	2.9	599	2.0	O 58.8	21 34	+ 2.0	1514	3.2	1459	3.4	O 50.5
8 17	+ 3.4	576	3.3	599	2.0	O 59.9	21 41	− 1.8	1308	3.1	1352	1.3	W 59.3
8 28	+ 2.2	599	2.0	569	2.9	O 60.1	22 12	+ 2.0	1407	2.9	1357	2.4	W 63.0
9 5	+ 3.0	666	4.8	690	3.2	O 49.2	22 27	− 2.4	1398	4.3	1459	3.4	W 50.5
9 22	+ 3.6	668	4.9	696	4.9	O 31.6	22 45	− 2.0	1431	4.3	1407	2.9	W 57.2
9 38	+ 2.2	719	3.6	701	2.3	O 49.5	23 5	− 2.2	1473	3.7	1520	3.5	W 66.5
9 56	− 1.8	536	3.6	576	3.3	W 57.9	23 25	+ 1.2	85	3.4	37	(2.2)	O 50.9
10.13	+ 1.0	745	3.5	708	3.0	O 62.1	23 43	− 2.4	1490	3.9	1520	3.5	W 64.0
10 28	+ 2.6	766	3.4	786	2.8	O 46.6	23 56	− 2.6	134	3.0	85	3.4	O 57.5
10 55	+ 1.4	838	3.1	793	3.6	O 36.7							
11 13	+ 2.0	817	3.4	818	2.8	O 61.9							
11 28	+ 2.4	801	3.5	791	4.3	O 64.2							
11 50	− 1.0	872	2.8	827	4.3	O 61.6							
12 7	+ 1.6	842	2.2	889	4.2	O 50.6							
12 27	+ 1.4	889	4.2	842	2.2	O 52.2							
12 31	− 2.8	690	3.2	701	2.3	W 47.0							
12 55	+ 2.8	912	2.9	932	3.7	O 61.2							

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr.	1. Stern Gr.	2. Stern Nr.	2. Stern Gr.	Höhe
h m	m					°	h m	m					°
0 35	− 3.4	131	2.1	85	3.4	O 61.0	14 4	− 2.2	818	2.8	817	3.4	W 64.8
0 58	− 1.6	1570	3.3	1516	1.2	W 31.0	14 23	− 2.2	885	3.4	838	3.1	W 44.1
1 15	+ 2.2	183	3.7	182	4.0	O 52.9	14 40	− 1.8	827	4.3	866	1.8	W 56.5
1 35	+ 1.0	131	2.1	189	2.5	O 66.8	14 58	+ 3.8	979	3.2	1017	2.6	O 49.5
1 51	− 2.8	39	2.2	86	2.7	W 48.6	15 16	+ 1.6	1092	2.4	1050	2.7	O 46.1
2 9	+ 2.0	221	3.5	190	3.0	O 55.2	15 31	− 1.4	866	1.8	852	3.3	W 52.5
2 24	+ 1.8	235	3.4	190	3.0	O 55.7	15 38	− 1.8	952	3.3	932	3.7	W 66.6
2 42	+ 3.6	221	3.5	211	1.9	O 59.1	15 58	+ 3.2	1105	3.2	1094	3.0	O 42.0
2 54	+ 2.2	302	4.3	320	3.2	O 39.4	16 17	+ 1.4	1174	3.2	1151	2.3	O 53.3
3 15	+ 2.2	320	3.2	302	4.3	O 41.0	16 27	+ 1.2	1174	3.2	1119	2.7	O 55.3
3 34	− 3.8	265	4.1	319	3.3	O 62.6	16 46	− 1.2	1003	3.5	1069	3.3	W 69.7
3 54	− 3.2	388	2.7	330	1.0	O 58.4	16 52	− 3.2	1151	2.3	1092	2.4	O 55.3
4 10	− 1.0	211	1.9	165	3.9	W 58.0	17 11	+ 1.4	1174	3.2	1131	3.6	O 62.8
4 30	− 2.4	182	4.0	183	3.7	W 51.0	17 29	+ 2.8	1237	4.9	1240	3.0	O 39.2
4 41	+ 3.0	319	3.3	361	1.6	O 67.5	17 38	− 1.8	1063	2.6	1119	2.7	W 56.4
5 14	+ 1.4	444	4.6	494	4.0	O 46.8	17 58	− 0.8	1297	3.6	1227	3.2	O 62.6
5 34	+ 1.4	494	4.0	444	4.6	O 48.6	18 12	− 2.6	1092	2.4	1146	3.6	W 51.7
5 36	+ 3.2	402	4.6	451	1.5	O 39.3	18 24	+ 1.4	1193	1.0	1251	3.3	O 70.3
5 59	− 2.2	299	3.8	329	1.0	W 60.4	18 35	− 1.2	1134	2.8	1193	1.0	W 70.3
6 34	+ 3.4	373	2.1	319	3.3	W 58.9	18 53	+ 2.2	1361	3.5	1378	4.2	O 43.4
6 38	− 1.8	387	1.9	361	1.6	W 62.4	19 10	− 2.8	1151	2.3	1148	3.4	W 54.2
7 2	− 3.2	533	4.4	494	4.0	O 60.9	19 26	+ 1.8	1397	2.5	1428	2.8	O 42.8
7 11	− 2.2	361	1.6	387	1.9	W 58.4	19 46	− 2.6	1182	2.8	1240	3.0	W 41.0
7 27	+ 2.2	599	2.0	604	3.1	O 50.6	20 0	− 2.6	1457	4.3	1407	2.9	O 58.7
8 20	+ 3.2	569	2.9	599	2.0	O 59.8	20 16	− 1.2	1251	3.3	1325	2.3	W 69.2
9 20	+ 3.2	666	4.8	690	3.2	O 50.6	20 32	+ 1.4	1431	4.3	1490	3.9	O 56.8
9 25	− 1.6	576	3.3	536	3.6	W 61.0	20 50	− 2.0	1290	3.8	1237	4.9	W 38.2
9 42	+ 2.0	708	3.0	734	4.4	O 58.9	21 8	− 1.6	1352	1.3	1308	3.1	W 63.4
9 55	+ 1.4	708	3.0	745	3.5	O 60.1	21 28	+ 2.6	1459	3.4	1514	3.2	O 50.6
10 12	+ 1.6	734	4.4	708	3.0	O 62.5	21 44	+ 2.2	1514	3.2	1459	3.4	O 51.2
10 18	+ 1.2	745	3.5	708	3.0	O 62.8	22 4	− 1.6	1361	3.5	1321	3.1	W 45.2
10 41	+ 3.0	766	3.4	786	2.8	O 48.0	22 22	+ 2.2	1407	2.9	1357	2.4	W 61.6
10 58	− 2.0	604	3.1	599	2.0	W 52.4	22 42	− 2.0	1397	2.5	1378	4.2	W 44.4
11 10	+ 1.8	816	1.7	843	1.1	O 48.0	23 0	− 3.0	1428	2.8	1459	3.4	W 49.6
11 23	+ 2.4	817	3.4	818	2.8	O 63.9	23 11	+ 1.6	37	(2.2)	85	3.4	O 49.6
11 40	+ 2.8	801	3.5	791	4.3	O 65.6	23 31	+ 3.6	4	2.2	39	2.2	O 50.0
11 49	− 2.8	701	2.3	690	3.2	W 50.9	23 35	+ 1.4	116	3.5	86	2.7	O 46.0
12 5	− 3.4	719	3.6	748	2.3	W 54.6							
12 17	− 3.2	690	3.2	701	2.3	W 48.5							
12 34	+ 1.4	889	4.2	842	2.2	O 53.1							
12 44	− 1.8	702	1.8	690	3.2	W 43.0							
13 9	+ 3.2	912	2.9	932	3.7	O 63.8							
13 28	− 1.4	740	3.8	734	4.4	W 53.5							
13 33	− 3.6	786	2.8	816	1.7	W 51.2							
13 53	+ 2.2	932	3.7	912	2.9	O 69.7							

Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr. Gr.	2. Stern Nr. Gr.	Höhe	Frühlings-punkts-Orts-Zeit	Diff. d. Fp. O. Zt. für +0.1° in Breite	1. Stern Nr. Gr.	2. Stern Nr. Gr.	Höhe
h m	m			°	h m	m			°
0 50	− 1.8	1570 3.3	1516 1.2	W 31.7	13 7	− 2.8	952 3.3	889 4.2	O 58.3
1 4	− 1.8	1516 1.2	1570 3.3	W 31.2	13 21	− 1.6	740 3.8	734 4.4	W 54.8
1 26	+ 2.6	183 3.7	182 4.0	O 54.2	13 53	− 2.6	818 2.8	817 3.4	W 66.7
1 40	+ 1.2	131 2.1	189 2.5	O 67.5	14 11	− 1.6	866 1.8	827 4.3	W 59.3
1 55	+ 2.4	190 3.0	221 3.5	O 54.2	14 31	− 1.8	827 4.3	866 1.8	W 57.6
2 15	+ 2.4	190 3.0	235 3.4	O 55.3	14 43	+ 1.0	1003 3.5	952 3.3	O 68.8
2 33	+ 1.8	235 3.4	190 3.0	O 56.4	15 0	− 2.2	842 2.2	843 1.1	W 49.4
2 59	+ 2.8	116 3.5	55 3.9	W 55.0	15 5	+ 1.8	1050 2.7	1092 2.4	O 45.6
3 5	+ 2.6	302 4.3	320 3.2	O 40.4	15 24	− 1.4	866 1.8	852 3.3	W 53.7
3 22	+ 2.2	329 1.0	350 2.2	O 55.5	15 39	− 2.8	1069 3.3	1030 2.8	O 66.5
3 42	+ 2.2	329 1.0	361 1.6	O 57.8	15 56	− 2.0	979 3.2	936 2.7	W 49.8
4 0	+ 1.8	350 2.2	329 1.0	O 60.8	16 14	− 2.4	936 2.7	979 3.2	W 48.6
4 18	− 2.8	182 4.0	183 3.7	W 52.7	16 33	+ 1.2	1174 3.2	1119 2.7	O 55.8
4 37	+ 3.2	319 3.3	350 2.2	O 67.7	16 44	+ 2.6	1100 3.1	1134 2.8	O 71.2
4 44	+ 2.8	248 3.0	299 3.8	W 67.0	17 2	+ 2.0	1131 3.6	1174 3.2	O 62.7
4 58	− 2.6	387 1.9	330 1.0	O 62.1	17 20	− 1.4	967 2.5	1019 3.8	W 47.5
5 21	+ 1.4	444 4.6	494 4.0	O 47.6	17 23	− 3.2	1017 2.6	1050 2.7	W 46.0
5 41	+ 1.4	494 4.0	444 4.6	O 49.6	17 43	+ 3.2	1237 4.9	1240 3.0	O 40.2
5 48	− 2.6	299 3.8	329 1.0	W 62.0	17 59	− 2.8	1092 2.4	1146 3.6	W 52.4
6 29	− 2.0	387 1.9	361 1.6	W 63.5	18 10	+ 2.8	1265 4.6	1240 3.0	O 41.2
6 30	− 1.8	387 1.9	350 2.2	W 63.2	18 31	+ 2.4	1283 2.8	1308 3.1	O 60.4
6 59	− 2.0	350 2.2	387 1.9	W 59.8	18 56	− 3.4	1151 2.3	1148 3.4	W 55.8
7 0	− 2.4	361 1.6	387 1.9	W 59.8	19 11	− 3.0	1185 3.6	1158 3.0	W 36.4
7 38	+ 2.4	599 2.0	604 3.1	O 51.9	19 29	+ 2.2	1361 3.5	1398 4.3	O 46.0
9 3	− 2.2	647 3.4	599 2.0	O 62.1	19 48	+ 2.0	1398 4.3	1361 3.5	O 47.2
9 17	− 1.6	576 3.3	536 3.6	W 61.9	20 1	− 2.0	1196 4.7	1243 3.8	W 54.7
9 37	− 2.0	536 3.6	576 3.3	W 60.1	20 23	− 3.2	1240 3.0	1237 4.9	W 40.8
9 52	+ 2.0	708 3.0	734 4.4	O 60.2	20 40	− 2.0	1290 3.8	1237 4.9	W 38.8
10 2	+ 1.4	708 3.0	745 3.5	O 61.2	21 0	− 1.6	1352 1.3	1308 3.1	W 64.3
10 20	+ 1.6	734 4.4	708 3.0	O 63.5	21 10	− 2.0	1290 3.8	1265 4.6	W 38.1
10 24	+ 1.2	745 3.5	708 3.0	O 63.6	21 30	− 2.2	1265 4.6	1290 3.8	W 36.8
10 48	− 2.4	604 3.1	599 2.0	W 53.7	21 41	+ 3.0	1459 3.4	1514 3.2	O 51.5
10 56	+ 3.6	766 3.4	786 2.8	O 49.6	21 56	− 1.8	1361 3.5	1321 3.1	W 46.0
11 10	+ 1.6	838 3.1	793 3.6	O 38.1	22 19	− 2.0	1321 3.1	1361 3.5	W 44.0
11 30	+ 2.2	843 1.1	842 2.2	O 49.4	22 33	+ 2.2	1407 2.9	1357 2.4	W 59.7
11 43	+ 1.8	843 1.1	816 1.7	O 51.2	22 45	− 3.8	1428 2.8	1459 3.4	W 50.9
11 54	+ 3.2	801 3.5	791 4.3	O 67.0	22 57	− 2.8	1407 2.9	1431 4.3	W 56.0
12 18	− 2.2	668 4.9	664 4.2	W 31.4	23 18	− 3.2	1490 3.9	1520 3.5	W 67.0
12 38	+ 1.6	936 2.7	885 3.4	O 43.0	23 38	+ 1.6	85 3.4	37(2.2)	O 52.4
12 41	+ 1.6	889 4.2	842 2.2	O 53.6	23 42	+ 1.4	116 3.5	86 2.7	O 46.7

Anhang zu Tafel III.

Sternverzeichnis.

Erläuterung.

Die Sternnummer ist die des Newcombschen Fundamentalkataloges. Sie stimmt mit den in Spalte 3 und 4 der Tafel III angegebenen Nummern überein und ermöglicht dadurch das Auffinden der beobachteten Sterne in den Jahrbüchern.

Ist die Größe eines Sterns in runde Klammern eingeschlossen, so liegt ein veränderlicher Stern vor, und die eingeklammerte Zahl gibt dessen durchschnittliche Größe oder Helligkeit.

In der »Bemerkungen« überschriebenen Spalte sind folgende Abkürzungen verwendet:

Eph. in N. A. = Ephemeride der scheinbaren Örter in Nautical Almanac.

Eph. in C. d. T. = Ephemeride der scheinbaren Örter in Connaissance des Temps.

Eph. in A. E. = Ephemeride der scheinbaren Örter in American Ephemeris.

Für alle anderen Sterne gibt das Berliner Astronomische Jahrbuch vom Jahrgang 1908 ab die Ephemeriden der scheinbaren Örter.

Nr.	Name	Größe	Gerade Aufsteigung 1908.0	Abweichung 1908.0	Bemerkungen
3	α Andromedae	2.1	0^h 4^m	+28.6°	
4	β Cassiopeiae	2.2	0 4	+58.6	
5	ε Phoenicis	3.8	0 5	−46.3	
10	γ Pegasi	2.7	0 8	+14.7	
15	ι Ceti	3.5	0 15	−9.3	
16	ζ Tucanae	4.2	0 15	−65.4	
21	α Phoenicis	2.3	0 22	−42.8	
31	ζ Cassiopeiae	3.8	0 32	+53.4	
36	δ Andromedae	3.2	0 34	+30.4	
37	α Cassiopeiae	(2.2)	0 35	+56.0	
39	β Ceti	2.2	0 39	−18.5	
42	ο Cassiopeiae	4.7	0 40	+47.8	
45	ζ Andromedae	4.1	0 42	+23.8	
54	γ Cassiopeiae	2.0	0 51	+60.2	
55	μ Andromedae	3.9	0 52	+38.0	
58	α Sculptoris	4.1	0 54	−29.9	
66	β Phoenicis	3.2	1 2	−47.2	
71	β Andromedae	2.1	1 5	+35.1	
85	ϑ Ceti	3.4	1 19	−8.7	
86	δ Cassiopeiae	2.7	1 20	+59.8	
91	γ Phoenicis	3.2	1 24	−43.8	Eph. in N. A.
94	η Piscium	3.6	1 27	+14.9	
99	υ Persei	3.6	1 32	+48.2	
101	α Eridani	1.0	1 34	−57.7	
105	φ Persei	4.1	1 38	+50.2	
107	τ Ceti	3.4	1 40	−16.4	
116	ζ Ceti	3.5	1 47	−10.8	
117	ε Cassiopeiae	3.3	1 48	+63.2	
118	α Trianguli	3.5	1 48	+29.1	
121	β Arietis	2.7	1 50	+20.4	
124	χ Eridani	3.6	1 52	−52.1	
127	υ Ceti	3.9	1 56	−21.5	
129	α Hydri	2.9	1 56	−62.0	
131	γ Andromedae	2.1	1 58	+41.9	
133	α Arietis	2.0	2 2	+23.0	
134	β Trianguli	3.0	2 4	+34.6	
142	67 Ceti	5.8	2 12	−6.8	
144	φ Eridani	3.5	2 13	−51.9	Eph. in N. A.
146	κ Fornacis	5.4	2 18	−24.2	Eph. in N. A.
148	δ Hydri	4.2	2 20	−69.1	Eph. in N. A.
165	δ Ceti	3.9	2 35	−0.1	
170	ϑ Persei	4.1	2 38	+48.8	
174	π Ceti	4.0	2 40	−14.2	
178	41 Arietis	3.6	2 45	+26.9	
179	β Fornacis	4.4	2 45	−32.8	

Nr.	Name	Größe	Gerade Aufsteigung 1908.0	Abweichung 1908.0	Bemerkungen
182	τ Persei	4.0	2h 48m	+ 52.4°	
183	η Eridani	3.7	2 52	− 9.3	
187	ϑ Eridani	2.9	2 55	− 40.7	
189	α Ceti	2.5	2 57	+ 3.7	
190	γ Persei	3.0	2 58	+ 53.1	
194	μ Horologii	5.1	3 1	− 60.1	
195	β Persei	(2.2)	3 2	+ 40.6	
199	δ Arietis	4.3	3 6	+ 19.4	
202	12 Eridani	3.6	3 8	− 29.3	
210	e Eridani	4.2	3 16	− 43.4	Eph. in C. d. T.
211	α Persei	1.9	3 18	+ 49.5	
213	o Tauri	3.6	3 20	+ 8.7	
214	2 H. Camelop.	4.4	3 22	+ 59.6	
221	ε Eridani	3.5	3 29	− 9.8	
222	τ^5 Eridani	4.3	3 30	− 21.9	Eph. in N. A.
223	45 G. Horologii	5.8	3 30	− 50.7	Eph. in N. A.
230	δ Persei	3.0	3 36	+ 47.5	
234	ν Persei	3.9	3 39	+ 42.3	
235	δ Eridani	3.4	3 39	− 10.1	Eph. in N. A.
237	5 H. Camelop.	4.5	3 41	+ 71.0	
238	η Tauri	3.0	3 42	+ 23.8	
239	τ^6 Eridani	4.1	3 43	− 23.5	
243	g Eridani	4.1	3 46	− 36.5	= υ^2 Eridani
244	ζ Persei	2.9	3 48	+ 31.6	
248	ε Persei	3.0	3 52	+ 39.7	
251	γ Eridani	3.0	3 54	− 13.8	
260	c Persei	4.0	4 2	+ 47.5	
265	o^1 Eridani	4.1	4 7	− 7.1	
270	α Horologii	3.7	4 11	− 42.5	
271	α Reticuli	3.2	4 13	− 62.7	
275	υ^4 Eridani	3.3	4 14	− 34.0	
281	ε Tauri	3.5	4 23	+ 19.0	
288	α Tauri	1.0	4 31	+ 16.3	
291	α Doradus	3.2	4 32	− 55.2	
292	53 Eridani	3.9	4 34	− 14.5	
299	μ Eridani	3.8	4 41	− 3.4	Eph. in N. A.
302	9 Camelop.	4.3	4 45	+ 66.2	
309	ι Aurigae	2.7	4 51	+ 33.0	
312	10 Camelop.	4.1	4 55	+ 60.3	
316	ι Tauri	4.8	4 58	+ 21.5	
319	η Aurigae	3.3	5 0	+ 41.1	
320	ε Leporis	3.2	5 2	− 22.5	
329	α Aurigae	1.0	5 10	+ 45.9	
330	β Orionis	1.0	5 10	− 8.3	
342	γ Orionis	1.7	5 20	+ 6.3	

Nr.	Name	Größe	Gerade Aufsteigung 1908.0	Abweichung 1908.0	Bemerkungen
343	β Tauri	1.8	5^{h} 20^{m}	+ 28.5°	
350	δ Orionis	2.2	5 27	− 0.4	
354	α Leporis	2.6	5 29	− 17.9	
361	ε Orionis	1.6	5 32	− 1.3	
362	ζ Tauri	3.0	5 32	+ 21.1	
368	α Columbae	2.4	5 36	− 34.1	
373	ϰ Orionis	2.1	5 43	− 9.7	
379	β Columbae	2.9	5 48	− 35.8	Eph. in N. A.
382	α Orionis	1.0	5 50	+ 7.4	
383	δ Aurigae	3.8	5 52	+ 54.3	
387	β Aurigae	1.9	5 53	+ 44.9	
388	ϑ Aurigae	2.7	5 53	+ 37.2	
390	η Columbae	3.9	5 56	− 42.8	
402	22 H. Camelop.	4.6	6 9	+ 69.4	
411	ζ Canis majoris	2.9	6 17	− 30.0	
412	μ Geminorum	2.9	6 17	+ 22.6	
414	β Canis majoris	2.0	6 19	− 17.9	
416	α Argus	1.0	6 22	− 52.6	
427	γ Geminorum	2.0	6 32	+ 16.5	
429	ν Argus	3.1	6 35	− 43.1	
431	ε Geminorum	3.1	6 38	+ 25.2	
433	ξ Geminorum	3.4	6 40	+ 13.0	
434	α Canis majoris	1.0	6 41	− 16.6	
440	ϑ Geminorum	3.4	6 47	+ 34.1	
441	α Pictoris	3.2	6 47	− 61.8	
444	15 Lyncis	4.6	6 49	+ 58.5	
451	ε Canis majoris	1.5	6 55	− 28.8	
460	δ Canis majoris	1.9	7 5	− 26.2	
461	63 Aurigae	5.0	7 5	+ 39.5	
470	π Argus	2.5	7 14	− 36.9	
471	δ Geminorum	3.3	7 15	+ 22.2	
479	β Canis minoris	2.9	7 22	+ 8.5	
483	σ Argus	3.0	7 26	− 43.1	Eph. in N. A.
484	α^2 Geminorum	1.8	7 29	+ 32.1	
492	α Canis minoris	0.5	7 34	+ 5.5	
494	γ Monocerotis	4.0	7 37	− 9.3	Eph. in N. A.
495	ϰ Geminorum	3.4	7 39	+ 24.6	
496	β Geminorum	1.1	7 40	+ 28.2	
502	ξ Argus	3.4	7 45	− 24.6	Eph. in N. A.
519	ζ Argus	2.2	8 0	− 39.7	
520	27 Lyncis	4.6	8 2	+ 51.8	
523	ι Navis	2.8	8 4	− 24.0	
525	γ Argus	2.1	8 7	− 47.1	
528	20 Navis	5.3	8 9	− 15.5	
529	β Cancri	3.5	8 12	+ 9.5	

Nr.	Name	Größe	Gerade Aufsteigung 1908.0	Abweichung 1908.0	Bemerkungen
533	31 Lyncis	4.4	8^h 17^m	+43.5°	
535	ε Argus	1.7	8 21	−59.2	
536	Br. 1197	3.6	8 21	− 3.6	
537	o Ursae majoris	3.3	8 23	+61.0	
556	δ Cancri	3.9	8 39	+18.5	
557	α Pyxidis	3.7	8 40	−32.9	
558	ι Cancri	4.1	8 41	+29.1	
560	δ Argus	2.0	8 42	−54.4	
567	ζ Hydrae	3.1	8 51	+ 6.3	
569	ι Ursae majoris	2.9	8 53	+48.4	
570	c Carinae	4.0	8 53	−60.3	
573	10 Ursae majoris	3.9	8 55	+42.1	
576	κ Ursae majoris	3.3	8 57	+47.5	
582	σ^2 Ursae majoris	4.9	9 2	+67.5	
585	λ Argus	2.1	9 5	−43.1	
591	β Argus	1.7	9 12	−69.3	
594	ι Argus	2.2	9 15	−58.9	Eph. in N. A.
595	40 Lyncis	3.2	9 15	+34.8	
597	κ Argus	2.5	9 19	−54.6	
599	α Hydrae	2.0	9 23	− 8.3	
601	h Ursae majoris	3.5	9 24	+63.5	
603	d Ursae majoris	4.5	9 26	+70.2	
604	ϑ Ursae majoris	3.1	9 27	+52.1	
606	ψ Argus	3.6	9 27	−40.1	
607	10 Leonis min.	4.6	9 29	+36.8	
622	ϑ Antliae	5.0	9 40	−27.3	
623	ε Leonis	3.0	9 41	+24.2	
626	υ Ursae majoris	3.8	9 44	+59.5	
627	υ Argus	3.0	9 45	−64.6	
636	φ Argus	3.7	9 54	−54.1	Eph. in C. d. T.
641	η Leonis	3.4	10 2	+17.2	
642	α Leonis	1.3	10 3	+12.4	
645	q Velorum	3.9	10 11	−41.7	
647	λ Ursae majoris	3.4	10 12	+43.4	
648	ζ Leonis	3.4	10 12	+23.9	
657	μ Ursae majoris	3.0	10 17	+42.0	
664	α Antliae	4.2	10 23	−30.6	
666	36 Ursae majoris	4.8	10 25	+56.5	
668	9 H. Draconis	4.9	10 27	+76.2	
684	ϑ Argus	2.8	10 40	−63.9	
685	42 Leonis min.	5.3	10 41	+31.2	
688	μ Argus	2.7	10 43	−48.9	
690	ν Hydrae	3.2	10 45	−15.7	Eph. in C. d. T.
696	ι Antliae	4.9	10 52	−36.6	Eph. in N. A.
701	β Ursae majoris	2.3	10 56	+56.9	

Nr.	Name	Größe	Gerade Aufsteigung 1908.0	Abweichung 1908.0	Bemerkungen
702	α Ursae majoris	1.8	10^h 58^m	+62.2°	
703	χ Leonis	4.8	11 0	+ 7.8	
708	ψ Ursae majoris	3.0	11 4	+45.0	
710	β Crateris	4.3	11 7	−22.3	
712	δ Leonis	2.4	11 9	+21.0	
713	ϑ Leonis	3.3	11 9	+15.9	
718	ν Ursae majoris	3.4	11 14	+33.6	
719	δ Crateris	3.6	11 15	−14.3	
721	π Centauri	4.1	11 17	−54.0	
730	λ Draconis	3.6	11 26	+69.8	
731	ξ Hydrae	3.6	11 28	−31.3	
733	λ Centauri	3.3	11 32	−62.5	
734	υ Leonis	4.4	11 32	− 0.3	
740	χ Ursae majoris	3.8	11 41	+48.3	
744	β Leonis	2.1	11 44	+15.1	
745	β Virginis	3.5	11 46	+ 2.3	
746	*B* Centauri	4.8	11 47	44.7	Eph. in N. A.
748	γ Ursae majoris	2.3	11 49	+54.2	
760	δ Centauri	2.7	12 4	−50.2	
762	ε Corvi	3.0	12 5	−22.1	
766	δ Ursae majoris	3.4	12 11	+57.5	
780	α^1 Crucis	1.0	12 21	−62.6	
786	δ Corvi	2.8	12 25	−16.0	
789	γ Crucis	1.6	12 26	−56.6	Eph. in N. A.
791	8 Canum venat.	4.3	12 29	+41.9	
792	β Corvi	2.6	12 30	−22.9	
793	κ Draconis	3.6	12 30	+70.3	
795	24 Comae	5.1	12 31	+18.9	
800	γ Centauri	2.3	12 36	−48.5	
801	γ^1 Virginis	3.5	12 37	− 0.9	Eph. in N. A.
808	β Crucis	1.4	12 42	−59.2	
816	ε Ursae majoris	1.7	12 50	+56.5	
817	δ Virginis	3.4	12 51	+ 3.9	
818	12 Canum venat.	2.8	12 52	+38.8	
821	ε Virginis	2.8	12 58	+11.5	
827	ϑ Virginis	4.3	13 5	− 5.0	
830	43 Comae	4.2	13 8	+28.3	
838	γ Hydrae	3.1	13 14	22.7	
839	ι Centauri	2.9	13 15	−36.2	
842	ζ^1 Ursae majoris	2.2	13 20	+55.4	
843	α Virginis	1.1	13 20	−10.7	
852	ζ Virginis	3.3	13 30	− 0.1	
854	17 H. Canum venat.	4.9	13 31	+37.7	
857	ε Centauri	2.4	13 34	−53.0	
859	*m* Virginis	5.3	13 37	− 8.2	Eph. in N. A.

Nr.	Name	Größe	Gerade Aufsteigung 1908.0		Abweichung 1908.0	Bemerkungen
866	η Ursae majoris	1.8	13h	44m	+49.8°	
871	ζ Centauri	2.6	13	50	−46.8	
872	η Bootis	2.8	13	50	+18.9	
881	β Centauri	1.0	13	57	−59.9	
882	π Hydrae	3.4	14	1	−26.2	Eph. in N. A.
883	ϑ Centauri	2.1	14	1	−35.9	
885	α Draconis	3.4	14	2	+64.8	
888	d Bootis	4.9	14	6	+25.5	
889	κ Virginis	4.2	14	8	− 9.8	
893	α Bootis	1.0	14	11	+19.7	
894	λ Bootis	4.0	14	13	+46.5	
904	ϑ Bootis	3.9	14	22	+52.3	
910	ϱ Bootis	3.7	14	28	+30.8	
912	γ Bootis	2.9	14	28	+38.7	
917	α Ceutauri	1.0	14	33	−60.5	
920	α Lupi	2.4	14	36	−47.0	Eph. in N. A.
932	109 Virginis	3.7	14	42	+ 2.3	
936	α Librae	2.7	14	46	−15.7	
944	β Ursae minoris	2.0	14	51	+74.5	
948	β Lupi	2.7	14	53	−42.8	
952	β Bootis	3.3	14	58	+40.8	
953	γ Scorpii	3.4	14	59	−24.9	
959	ζ Lupi	3.4	15	6	−51.7	
966	δ Bootis	3.2	15	12	+33.7	
967	β Librae	2.5	15	12	− 9.0	
970	φ¹ Lupi	3.5	15	16	−35.9	
975	μ Bootis	4.1	15	21	+37.7	
976	γ Ursae minoris	3.0	15	21	+72.2	
979	ι Draconis	3.2	15	23	+59.3	
980	β Coronae bor.	3.7	15	24	+29.4	
981	ν¹ Bootis	4.8	15	28	+41.1	
984	γ Lupi	2.9	15	29	−40.9	
987	α Coronae bor.	2.2	15	31	+27.0	
997	α Serpentis	2.5	15	40	+ 6.7	
998	β Serpentis	3.4	15	42	+15.7	
1000	μ Serpentis	3.3	15	45	− 3.1	
1003	ε Serpentis	3.5	15	46	+ 4.8	
1004	β Triang. aust.	2.9	15	47	−63.1	
1012	δ Scorpii	2.3	15	55	−22.4	
1017	β Scorpii	2.6	16	0	−19.6	
1019	ϑ Draconis	3.8	16	0	+58.8	
1026	φ Herculis	4.0	16	6	+45.2	Eph. in A. E.
1030	δ Ophiuchi	2.8	16	10	− 3.5	
1032	γ² Normae	4.2	16	13	−49.9	
1036	τ Herculis	3.6	16	17	+46.5	

Nr.	Name	Größe	Gerade Aufsteigung 1908.0	Abweichung 1908.0	Bemerkungen
1039	γ Herculis	3.5	16h 18m	+19.4°	
1050	η Draconis	2.7	16 23	+61.7	
1051	α Scorpii	1.2	16 24	−26.2	
1056	β Herculis	2.6	16 26	+21.7	
1059	A Draconis	5.0	16 28	+69.0	
1062	σ Herculis	4.1	16 31	+42.6	
1063	ζ Ophiuchi	2.6	16 32	−10.4	
1068	α Triang. austr.	1.9	16 39	−68.9	
1069	η Herculis	3.3	16 40	+39.1	
1071	Gr. 2377	4.9	16 44	+56.9	
1073	ε Scorpii	2.3	16 44	−34.1	
1081	ζ Arae	3.0	16 51	−55.8	
1084	κ Ophiuchi	3.2	16 53	+ 9.5	
1088	ε Herculis	3.6	16 57	+31.1	
1092	η Ophiuchi	2.4	17 5	−15.6	
1094	ζ Draconis	3.0	17 9	+65.8	
1098	δ Herculis	3.0	17 11	+24.9	
1100	π Herculis	3.1	17 12	+36.9	
1105	ϑ Ophiuchi	3.2	17 16	−24.9	
1107	β Arae	2.7	17 18	−55.4	
1118	λ Scorpii	1.7	17 27	−37.0	
1119	β Draconis	2.7	17 28	+52.4	
1121	ϑ Scorpii	1.9	17 31	−42.9	
1123	α Ophiuchi	2.1	17 31	+12.6	
1125	ξ Serpentis	3.5	17 32	−15.3	
1129	η Pavonis	3.5	17 37	−64.7	
1131	ι Herculis	3.6	17 37	+46.1	
1132	ω Draconis	4.9	17 37	+68.8	
1134	β Ophiuchi	2.8	17 39	+ 4.6	
1137	μ Herculis	3.3	17 43	+27.8	
1140	ψ Draconis	4.7	17 44	+72.2	
1146	ξ Draconis	3.6	17 52	+56.9	
1148	ν Ophiuchi	3.4	17 54	− 9.8	
1151	γ Draconis	2.3	17 54	+51.5	
1158	γ Sagittarii	3.0	18 0	−30.4	
1160	72 Ophiuchi	3.6	18 3	+ 9.6	
1174	η Serpentis	3.2	18 17	− 2.9	
1175	ε Sagittarii	1.9	18 18	−34.4	
1178	109 Herculis	3.9	18 20	+21.7	
1182	λ Sagittarii	2.8	18 22	−25.5	Eph. in N. A.
1185	χ Draconis	3.6	18 23	+72.7	
1193	α Lyrae	1.0	18 34	+38.7	
1196	2 Aquilae	4.7	18 37	− 9.1	Eph. in N. A.
1199	φ Sagittarii	3.3	18 40	−27.1	Eph. in N. A.
1202	110 Herculis	4.1	18 42	+20.5	

Nr.	Name	Größe	Gerade Aufsteigung 1908.0	Abweichung 1908.0	Bemerkungen
1211	σ Sagittarii	2.1	18h 50m	− 26.4°	
1213	o Draconis	4.6	18 50	+ 59.3	
1218	*R* Lyrae	(4.5)	18 53	+ 43.8	
1220	γ Lyrae	3.2	18 56	+ 32.6	
1226	ζ Aquilae	3.0	19 1	+ 13.7	
1227	λ Aquilae	3.2	19 1	− 5.0	
1228	α Coronae aust.	4.1	19 3	− 38.0	
1231	π Sagittarii	2.9	19 4	− 21.2	
1237	ψ Sagittarii	4.9	19 10	− 25.4	Eph. in N. A.
1240	δ Draconis	3.0	19 13	+ 67.5	
1243	κ Cygni	3.8	19 15	+ 53.2	
1248	τ Draconis	4.5	19 17	+ 73.2	
1251	δ Aquilae	3.3	19 21	+ 2.9	
1259	β Cygni	3.0	19 27	+ 27.8	
1260	ι Cygni	3.9	19 27	+ 51.5	
1265	*h* Sagittarii	4.6	19 31	− 25.1	
1269	ϑ Cygni	4.5	19 34	+ 50.0	
1271	e^1 Sagittarii	5.5	19 35	− 16.5	Eph. in N. A.
1282	γ Aquilae	2.7	19 42	+ 10.4	
1283	δ Cygni	2.8	19 42	+ 44.9	
1286	α Aquilae	1.0	19 46	+ 8.6	
1289	ι Sagittarii	4.1	19 49	− 42.1	Eph. in N. A.
1290	ε Draconis	3.8	19 48	+ 70.0	
1297	γ Sagittae	3.6	19 55	+ 19.2	
1299	*c* Sagittarii	4.6	19 57	− 28.0	Eph. in N. A.
1303	δ Pavonis	3.5	20 0	− 66.4	
1308	ϑ Aquilae	3.1	20 7	− 1.1	
1321	β Capricorni	3.1	20 16	− 15.1	Eph. in N. A.
1324	α Pavonis	1.9	20 18	− 57.0	
1325	γ Cygni	2.3	20 19	+ 40.0	
1336	ϑ Cephei	4.1	20 28	+ 62.7	
1341	α Indi	3.0	20 31	− 47.6	
1344	β Delphini	3.5	20 33	+ 14.3	
1348	υ Capricorni	5.5	20 35	− 18.5	
1349	α Delphini	3.7	20 35	+ 15.6	
1352	α Cygni	1.3	20 38	+ 45.0	
1357	ε Cygni	2.4	20 42	+ 33.6	
1358	ε Aquarii	3.6	20 43	− 9.8	
1361	η Cephei	3.5	20 43	+ 61.5	
1364	β Indi	3.6	20 48	− 58.8	
1366	μ Aquarii	4.8	20 48	− 9.3	Eph. in N. A.
1373	ν Cygni	3.9	20 54	+ 40.8	
1374	1 Piscis austr.	4.8	20 56	− 32.6	Eph. in N. A.
1378	ϑ Capricorni	4.2	21 1	− 17.6	Eph. in N. A.
1389	ζ Cygni	3.1	21 9	+ 29.8	

Nr.	Name	Größe	Gerade Aufsteigung 1908.0		Abweichung 1908.0	Bemerkungen
1396	ϑ^1 Microscopii	4.9	21h	15m	−41.2°	Eph. in N. A.
1397	α Cephei	2.5	21	16	+62.2	
1398	ι Capricorni	4.3	21	17	−17.2	Eph. in N. A.
1399	1 Pegasi	4.2	21	18	+19.4	
1400	γ Pavonis	4.2	21	19	−65.8	
1403	ζ Capricorni	3.8	21	21	−22.8	
1407	β Aquarii	2.9	21	27	− 6.0	
1409	β Cephei	3.1	21	27	+70.2	
1424	ε Pegasi	2.3	21	40	+ 9.5	
1428	δ Capricorni	2.8	21	42	−16.5	
1431	π^2 Cygni	4.3	21	43	+48.9	
1434	γ Gruis	3.0	21	48	−37.8	
1435	16 Pegasi	5.2	21	49	+25.5	
1449	α Aquarii	2.9	22	1	− 0.8	
1451	α Gruis	1.8	22	2	−47.4	
1456	ϑ Pegasi	3.6	22	6	+ 5.7	
1457	π Pegasi	4.3	22	6	+32.7	
1459	ζ Cephei	3.4	22	8	+57.7	
1460	24 Cephei	4.8	22	8	+71.9	
1466	ϑ Aquarii	4.2	22	12	− 8.2	
1467	α Tucanae	2.8	22	12	−60.7	
1473	γ Aquarii	3.7	22	17	− 1.9	
1477	3 Lacertae	4.5	22	20	+51.8	
1483	σ Aquarii	4.8	22	26	−11.1	Eph. in N. A.
1488	7 Lacertae	3.8	22	27	+49.8	
1490	η Aquarii	3.9	22	31	− 0.6	
1499	ζ Pegasi	3.3	22	37	+10.4	
1500	β Gruis	2.0	22	37	−47.4	
1501	η Pegasi	2.9	22	39	+29.7	
1510	ι Cephei	3.5	22	46	+65.7	
1514	δ Aquarii	3.2	22	50	−16.3	
1516	α Piscis austr.	1.2	22	53	−30.1	
1520	o Andromedae	3.5	22	58	+41.8	
1523	β Pegasi	2.4	22	59	+27.6	
1525	α Pegasi	2.4	23	0	+14.7	
1531	c^2 Aquarii	3.7	23	5	−21.7	
1539	γ Tucanae	3.9	23	12	−58.7	
1546	τ Pegasi	4.5	23	16	+23.2	
1563	ι Phoenicis	4.9	23	30	−43.1	Eph. in N. A.
1568	ι Andromedae	4.1	23	34	+42.8	
1570	γ Cephei	3.3	23	36	+77.1	
1581	δ Sculptoris	4.4	23	44	−28.6	
1593	ε Tucanae	4.5	23	55	−66.1	
1596	2 Ceti	4.5	23	59	−17.8	Eph. in N. A.

Tafel IIIa.

Hilfsgrößen für die Vorbereitungsrechnung bei Breitenbestimmungen.

φ	Stundenwinkel 0h5 Δφ		Stundenwinkel 0h5 log r		Stundenwinkel 1h0 Δφ		Stundenwinkel 1h0 log r		Stundenwinkel 1h5 Δφ		Stundenwinkel 1h5 log r		Stundenwinkel 2h0 Δφ		Stundenwinkel 2h0 log r	
°	° ′				° ′				° ′				° ′			
0	0 0.0	5	9.9963	0	0 0.0	21	9.9849	0	0 0.0	50	9.9656	0	0 0.0	93	9.9375	1
1	0.5	5	63	0	2.1	21	49	1	5.0	49	56	1	9.3	92	76	0
2	1.0	6	63	0	4.2	21	50	0	9.9	49	57	0	18.5	93	76	1
3	1.6	5	63	0	6.3	21	50	0	14.8	49	57	1	27.8	92	77	2
4	2.1	5	63	0	8.4	21	50	1	19.7	49	58	1	37.0	91	79	2
5	2.6	5	63	0	10.5	21	51	0	24.6	48	59	1	46.1	91	81	2
6	3.1	5	63	0	12.6	21	51	1	29.4	48	60	2	0 55.2	90	83	3
7	3.6	5	63	0	14.7	20	52	0	34.2	48	62	1	1 4.2	89	86	3
8	4.1	5	63	1	16.7	20	52	1	39.0	47	63	2	13.1	87	89	4
9	4.6	5	64	0	18.7	20	53	1	43.7	46	65	2	21.8	87	93	4
10	5.1	5	64	0	20.7	20	54	1	48.3	46	67	3	30.5	85	9.9397	4
11	5.6	4	64	0	22.7	19	55	1	52.9	45	70	2	39.0	84	9.9401	5
12	6.0	5	64	1	24.6	19	56	1	0 57.4	44	72	3	47.4	82	06	6
13	6.5	5	65	0	26.5	19	57	1	1 1.8	43	75	3	1 55.6	81	12	5
14	7.0	4	65	0	28.4	18	58	2	6.1	43	78	3	2 3.7	78	17	6
15	7.4	5	65	1	30.2	18	60	1	10.4	42	81	3	11.5	77	23	7
16	7.9	4	66	0	32.0	18	61	2	14.6	40	84	4	19.2	75	30	6
17	8.3	4	66	0	33.8	17	63	1	18.6	40	88	3	26.7	72	36	7
18	8.7	4	66	1	35.5	17	64	2	22.6	38	91	4	33.9	70	43	8
19	9.1	4	67	0	37.2	16	66	1	26.4	37	95	4	40.9	69	51	7
20	9.5	4	67	0	38.8	16	67	2	30.1	36	9.9699	4	47.8	65	58	8
21	9.9	4	67	1	40.4	15	69	2	33.7	35	9.9703	5	2 54.3	63	66	9
22	10.3	4	68	0	41.9	15	71	2	37.2	34	08	4	3 0.6	61	75	8
23	10.7	3	68	1	43.4	14	73	2	40.6	32	12	5	6.7	58	83	9
24	11.0	3	69	0	44.8	14	75	2	43.8	31	17	5	12.5	55	9.9492	9
25	11.3	4	69	1	46.2	13	77	2	46.9	29	22	5	18.0	52	9.9501	9
26	11.7	3	70	0	47.5	12	79	2	49.8	28	27	5	23.2	50	10	10
27	12.0	3	70	1	48.7	12	81	2	52.6	26	32	5	28.2	47	20	9
28	12.3	2	71	0	49.9	11	83	3	55.2	25	37	5	32.9	44	29	10
29	12.5	3	71	1	51.0	11	86	2	1 57.7	24	42	5	37.3	41	39	10
30	12.8	3	72	1	52.1	10	88	2	2 0.1	22	47	6	41.4	38	49	10
31	13.1	2	73	0	53.1	9	90	3	2.3	20	53	5	45.2	35	59	11
32	13.3	2	73	1	54.0	8	93	2	4.3	19	58	6	48.7	32	70	10
33	13.5	2	74	0	54.8	8	95	3	6.2	18	64	6	51.9	29	80	11
34	13.7	2	74	1	55.6	7	9.9898	2	8.0	15	70	5	54.8	26	9.9591	10
35	13.9	1	75	1	56.3	7	9.9900	3	9.5	14	75	6	57.4	23	9.9601	11
36	14.0	2	76	0	57.0	6	03	2	10.9	12	81	6	3 59.7	20	12	11
37	14.2	2	76	1	57.6	5	05	3	12.1	11	87	6	4 1.7	16	23	11
38	14.4	1	77	1	58.1	4	08	2	13.2	9	93	6	3.3	14	34	10
39	14.5	0	78	0	58.5	4	10	3	14.1	7	9.9799	6	4.7	10	44	11
40	14.5		78		58.9		13		14.8		9.9805		5.7		55	

φ	Stundenwinkel 0^h5				Stundenwinkel 1^h0				Stundenwinkel 1^h5				Stundenwinkel 2^h0			
	$\Delta\varphi$		$\log r$		$\Delta\varphi$		$\log r$		$\Delta\varphi$		$\log r$		$\Delta\varphi$		$\log r$	
°	° ′				° ′				° ′				° ′			
40	0 14.5	1	9.9978	1	0 58.9	3	9.9913	2	2 14.8	6	9.9805	6	4 5.7	8	9.9655	11
41	14.6	1	79	0	59.2	2	15	3	15.4	4	11	6	6.5	4	66	11
42	14.7	0	79	1	59.4	1	18	3	15.8	2	17	6	6.9	1	77	11
43	14.7	1	80	1	59.5	1	21	2	16.0	0	23	6	7.0	1	88	11
44	14.8	0	81	0	59.6	0	23	3	16.0	1	29	6	6.9	5	99	11
45	14.8	1	81	1	59.6	1	26	3	15.9	3	35	6	6.4	8	9.9710	11
46	14.7	0	82	1	59.5	1	29	2	15.6	4	41	6	5.6	10	21	11
47	14.7	1	83	0	59.4	2	31	3	15.2	6	47	6	4.6	14	32	10
48	14.6	0	83	1	59.2	3	34	2	14.6	7	53	5	3.2	16	42	11
49	14.6	1	84	1	58.9	4	36	3	13.9	9	58	6	4 1.6	19	53	10
50	14.5	1	85	0	58.5	4	39	3	13.0	11	64	6	3 59.7	22	63	11
51	14.4	1	85	1	58.1	5	42	2	11.9	12	70	6	57.5	25	74	10
52	14.3	1	86	1	57.6	6	44	3	10.7	14	76	6	55.0	27	84	10
53	14.2	2	87	0	57.0	6	47	2	9.3	16	82	5	52.3	30	9.9794	10
54	14.0	1	87	1	56.4	7	49	3	7.7	17	87	6	49.3	33	9.9804	10
55	13.9	2	88	0	55.7	8	52	2	6.0	18	93	5	46.0	35	14	9
56	13.7	2	88	1	54.9	8	54	2	4.2	20	9.9898	6	42.5	37	23	10
57	13.5	2	89	1	54.1	10	56	3	2.2	21	9.9904	5	38.8	40	33	9
58	13.3	3	90	0	53.1	9	59	2	2 0.1	23	09	5	34.8	43	42	9
59	13.0	2	90	1	52.2	10	61	2	1 57.8	24	14	5	30.5	44	51	9
60	12.8	3	91	0	51.2	11	63	3	55.4	25	19	5	26.1	47	60	8
61	12.5	3	91	1	50.1	12	66	2	52.9	26	24	5	21.4	49	68	9
62	12.2	3	92	0	48.9	12	68	2	50.3	28	29	4	16.5	51	77	8
63	11.9	3	92	1	47.7	12	70	2	47.5	29	33	5	11.4	53	85	8
64	11.6	3	93	0	46.5	13	72	2	44.6	30	38	4	6.1	55	9.9893	8
65	11.3	4	93	1	45.2	14	74	2	41.6	32	42	5	3 0.6	57	9.9901	7
66	10.9	3	94	0	43.8	14	76	2	38.4	32	47	4	2 54.9	58	08	7
67	10.6	4	94	1	42.4	15	78	2	35.2	34	51	4	49.0	61	15	7
68	10.2	4	95	0	40.9	15	80	1	31.8	34	55	4	42.9	62	22	7
69	9.8	4	95	1	39.4	16	81	2	28.4	36	59	4	36.7	64	29	7
70	0 9.4		9.9996		0 37.8		9.9983		1 24.8		9.9963		2 30.3		9.9936	

Tafel IVa. Mittlere Strahlenbrechung.

Scheinbarer Zenitabstand	Mittlere Strahlenbrechung	Scheinbarer Zenitabstand	Mittlere Strahlenbrechung	Scheinbarer Zenitabstand	Mittlere Strahlenbrechung	Scheinbarer Zenitabstand	Mittlere Strahlenbrechung	Scheinbarer Zenitabstand	Mittlere Strahlenbrechung
0°	0″	46° 0′	1′ 0″	60° 0′	1′ 41″	74° 0′	3′ 20″	81° 0′	5′ 52″
1	1	20	1 1	20	1 42	10	3 22	10	5 59
2	2	40	1 2	40	1 43	20	3 25	20	6 5
3	3	47 0	1 2	61 0	1 45	30	3 27	30	6 12
4	4	20	1 3	20	1 46	40	3 29	40	6 19
5	5	40	1 4	40	1 48	50	3 32	50	6 26
6	6								
7	7	48 0	1 5	62 0	1 49	75 0	3 34	82 0	6 33
8	8	20	1 5	20	1 51	10	3 36	10	6 41
9	9	40	1 6	40	1 52	20	3 39	20	6 49
		49 0	1 7	63 0	1 54	30	3 41	30	6 57
10	10	20	1 8	20	1 55	40	3 44	40	7 5
11	11	40	1 9	40	1 57	50	3 47	50	7 14
12	12								
13	13	50 0	1 9	64 0	1 59	76 0	3 49	83 0	7 24
14	15	20	1 10	20	2 1	10	3 52	10	7 33
15	16	40	1 11	40	2 2	20	3 55	20	7 43
16	17	51 0	1 12	65 0	2 4	30	3 58	30	7 54
17	18	20	1 13	20	2 6	40	4 1	40	8 5
18	19	40	1 14	40	2 8	50	4 4	50	8 16
19	20								
		52 0	1 14	66 0	2 10	77 0	4 7	84 0	8 28
20	21	20	1 15	20	2 12	10	4 10	10	8 40
21	22	40	1 16	40	2 14	20	4 13	20	8 53
22	24	53 0	1 17	67 0	2 16	30	4 17	30	9 7
23	25	20	1 18	20	2 19	40	4 20	40	9 21
24	26	40	1 19	40	2 21	50	4 24	50	9 36
25	27								
26	28	54 0	1 20	68 0	2 23	78 0	4 27	85 0	9 52
27	30	20	1 21	20	2 26	10	4 31	10	10 8
28	31	40	1 22	40	2 28	20	4 35	20	10 26
29	32	55 0	1 23	69 0	2 31	30	4 39	30	10 45
		20	1 24	20	2 33	40	4 43	40	11 4
30	34	40	1 25	40	2 36	50	4 47	50	11 24
31	35								
32	36	56 0	1 26	70 0	2 39	79 0	4 51	86 0	11 45
33	38	20	1 27	20	2 42	10	4 55	10	12 7
34	39	40	1 28	40	2 45	20	5 0	20	12 30
35	41	57 0	1 29	71 0	2 48	30	5 4	30	12 55
36	42	20	1 31	20	2 51	40	5 9	40	13 22
37	44	40	1 32	40	2 54	50	5 14	50	13 51
38	45								
39	47	58 0	1 33	72 0	2 57	80 0	5 19	87 0	14 22
		20	1 34	20	3 1	10	5 24	10	14 55
40	49	40	1 35	40	3 4	20	5 29	20	15 31
41	51	59 0	1 37	73 0	3 8	30	5 35	30	16 9
42	52	20	1 38	20	3 12	40	5 41	40	16 49
43	54	40	1 39	40	3 16	50	5 46	50	17 32
44	56								
45	58	60 0	1 41	74 0	3 20	81 0	5 52	88 0	18 18
46	60								

Tafel IVb. Berichtigung der mittleren Strahlenbrechung für Thermometerstand.

Therm. Celsius	Mittlere Strahlenbrechung																	
	1′	2′	3′	4′	5′	6′	7′	8′	9′	10′	11′	12′	13′	14′	15′	16′	17′	18′
°	″	″	″	″	″	″	″	″	″	″	″	″	″	″	″	″	″	″
− 40	+ 13	26	39	53	67	81	96	112	129	146	164	182	202	222	243	264	286	310
− 35	+ 11	23	34	46	59	71	85	99	114	128	144	160	178	195	214	232	252	273
− 30	+ 10	20	30	40	51	62	74	86	99	112	125	139	154	170	186	202	219	237
− 25	+ 8	17	26	35	44	53	63	74	84	96	107	119	132	145	159	173	187	202
− 20	+ 7	14	22	29	37	45	53	62	71	80	90	100	111	122	133	145	157	169
− 15	+ 6	12	18	24	30	37	43	50	58	65	73	82	90	99	108	118	128	138
− 10	+ 5	9	14	19	24	29	34	40	45	51	58	64	71	78	85	92	100	108
− 5	+ 3	7	10	14	17	21	25	29	33	38	42	47	52	57	62	68	74	79
− 4	+ 3	6	9	13	16	20	23	27	31	35	39	44	48	53	58	63	68	74
− 3	+ 3	6	9	12	15	18	22	25	29	32	36	40	45	49	54	58	63	68
− 2	+ 3	5	8	11	14	17	20	23	26	30	33	37	41	45	49	54	58	63
− 1	+ 2	5	8	10	13	15	18	21	24	27	31	34	37	41	45	49	53	57
0	+ 2	4	7	9	11	14	16	19	22	25	28	31	34	37	41	44	48	52
+ 1	+ 2	4	6	8	10	12	15	17	20	22	25	27	30	33	36	40	43	46
+ 2	+ 2	3	5	7	9	11	13	15	17	20	22	24	27	30	32	35	38	41
+ 3	+ 2	3	5	6	8	10	11	13	15	17	19	21	24	26	28	31	33	36
+ 4	+ 1	3	4	5	7	8	10	11	13	15	16	18	20	22	24	26	28	31
+ 5	+ 1	2	3	4	6	7	8	9	11	12	14	15	17	18	20	22	24	25
+ 6	+ 1	2	3	4	4	5	6	7	9	10	11	12	13	15	16	17	19	20
+ 7	+ 1	1	2	3	3	4	5	6	6	7	8	9	10	11	12	13	14	15
+ 8	+ 0	1	1	2	2	3	3	4	4	5	5	6	7	7	8	9	9	10
+ 9	+ 0	0	1	1	1	1	2	2	2	2	3	3	3	4	4	4	5	5
+ 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+ 11	− 0	0	1	1	1	1	2	2	2	2	3	3	3	4	4	4	5	5
+ 12	− 0	1	1	2	2	3	3	4	4	5	5	6	7	7	8	8	9	10
+ 13	− 1	1	2	3	3	4	5	5	6	7	8	9	10	11	12	13	14	15
+ 14	− 1	2	3	3	4	5	6	7	8	9	11	12	13	14	15	17	18	20
+ 15	− 1	2	3	4	5	7	8	9	10	12	13	15	16	18	19	21	23	25
+ 16	− 1	3	4	5	6	8	9	11	12	14	16	17	19	21	23	25	27	29
+ 17	− 1	3	4	6	7	9	11	12	14	16	18	20	22	24	27	29	31	34
+ 18	− 2	3	5	7	9	10	12	14	16	18	21	23	25	28	30	33	36	38
+ 19	− 2	4	6	8	10	12	14	16	18	21	23	26	28	31	34	37	40	43
+ 20	− 2	4	6	8	11	13	15	18	20	23	26	28	31	35	38	41	44	48
+ 21	− 2	4	7	9	12	14	17	19	22	25	28	31	34	38	41	45	48	52
+ 22	− 2	5	7	10	13	15	18	21	24	27	31	34	37	41	45	49	53	57
+ 23	− 3	5	8	11	14	17	20	23	26	29	33	37	40	44	48	53	57	61
+ 24	− 3	6	9	12	15	18	21	24	28	32	35	39	43	48	52	56	61	66
+ 25	− 3	6	9	12	16	19	22	26	30	34	38	42	46	51	55	60	65	70
+ 26	− 3	6	10	13	17	20	24	28	32	36	40	45	49	54	59	64	69	75
+ 27	− 3	7	10	14	18	21	25	29	34	38	43	47	52	57	62	68	73	79
+ 28	− 4	7	11	15	18	22	27	31	35	40	45	50	55	60	66	71	77	83
+ 29	− 4	8	11	15	19	24	28	33	37	42	47	52	58	63	69	75	81	88
+ 30	− 4	8	12	16	20	25	29	34	39	44	49	55	61	66	73	79	85	92
+ 35	− 5	10	15	20	25	31	36	42	48	54	61	67	74	82	89	97	104	113
+ 40	− 6	12	18	23	30	36	43	50	57	64	72	80	88	96	105	114	124	133

Tafel IVc. Berichtigung der mittleren Strahlenbrechung für Barometerstand.

	Mittlere Strahlenbrechung + Berichtigung für Thermometerstand.																	
	1′	2′	3′	4′	5′	6′	7′	8′	9′	10′	11′	12′	13′	14′	15′	16′	17′	18′
mm																		
400	− 28	57	85	114	143	171	200	229	258	287	316	345	375	404	434	464	494	524
450	− 24	49	73	98	123	147	172	197	222	247	272	298	323	349	374	400	426	452
500	− 21	41	62	82	103	124	145	165	186	207	229	250	271	293	314	336	358	380
550	− 17	33	50	66	83	100	117	134	151	168	185	202	219	237	254	272	290	307
600	− 13	25	38	51	63	76	89	102	115	128	141	154	167	180	194	207	221	235
610	− 12	24	36	48	59	71	83	95	108	120	132	144	157	169	182	194	207	220
620	− 11	22	33	44	55	66	78	89	100	112	123	135	146	158	170	181	193	205
630	− 10	21	31	41	52	62	72	83	93	104	114	125	136	147	158	169	180	191
640	− 9	19	29	38	48	57	67	76	86	96	106	116	126	135	146	156	166	176
650	− 9	17	26	35	44	52	61	70	79	88	97	106	115	124	133	143	152	161
660	− 8	16	24	32	40	48	56	64	72	80	88	96	105	113	121	130	138	147
670	− 7	14	21	29	36	43	50	57	65	72	79	87	94	102	109	117	124	132
680	− 6	13	19	25	32	38	44	51	57	64	71	77	84	90	97	104	111	118
690	− 6	11	17	22	28	33	39	45	50	56	62	67	73	79	85	91	97	103
700	− 5	9	14	19	24	29	33	38	43	48	53	58	63	68	73	78	83	88
710	− 4	8	12	16	20	24	28	32	36	40	44	48	52	56	61	65	69	74
720	− 3	6	9	13	16	19	22	25	29	32	35	39	42	45	49	52	55	59
730	− 2	5	7	10	12	14	17	19	22	24	26	29	31	34	36	39	42	44
732	− 2	4	7	9	11	13	16	18	20	22	25	27	29	32	34	36	39	41
734	− 2	4	6	8	10	12	14	17	19	21	23	25	27	29	32	34	36	38
736	− 2	4	6	8	10	11	13	15	17	19	21	23	25	27	29	31	33	35
738	− 2	3	5	7	9	10	12	14	16	18	19	21	23	25	27	29	30	32
740	− 2	3	5	6	8	10	11	13	14	16	18	19	21	23	24	26	28	29
742	− 1	3	4	6	7	9	10	11	13	14	16	17	19	20	22	23	25	26
744	− 1	3	4	5	6	8	9	10	11	13	14	15	17	18	19	21	22	24
746	− 1	2	3	4	6	7	8	9	10	11	12	13	15	16	17	18	19	21
748	− 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
750	− 1	2	2	3	4	5	6	6	7	8	9	10	10	11	12	13	14	15
752	− 1	1	2	3	3	4	4	5	6	6	7	8	8	9	10	10	11	12
754	− 0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9
756	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6
758	− 0	0	0	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3
760	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
762	+ 0	0	0	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3
764	+ 0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6
766	+ 0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9
768	+ 1	1	2	3	3	4	4	5	6	6	7	8	8	9	10	10	11	12
770	+ 1	2	2	3	4	5	6	6	7	8	9	10	10	11	12	13	14	15
772	+ 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
774	+ 1	2	3	4	6	7	8	9	10	11	12	14	15	16	17	18	19	21
776	+ 1	3	4	5	6	8	9	10	11	13	14	15	17	18	19	21	22	24
778	+ 1	3	4	6	7	9	10	11	13	14	16	17	19	20	22	23	25	26
780	+ 2	3	5	6	8	10	11	13	14	16	18	19	21	23	24	26	28	29
790	+ 2	5	7	10	12	14	17	19	22	24	26	29	31	34	37	39	42	44

Tafel Va. Tafel zur Verwandlung der mittleren Zeit in Sternzeit.

s	+0m			+1m			+2m			+3m		
0	0h	0m	0s	6h	5m	15s	12h	10m	29s	18h	15m	44s
1	0	6	5	6	11	20	12	16	34	18	21	49
2	0	12	10	6	17	25	12	22	40	18	27	54
3	0	18	16	6	23	30	12	28	45	18	33	59
4	0	24	21	6	29	36	12	34	50	18	40	5
5	0	30	26	6	35	41	12	40	55	18	46	10
6	0	36	31	6	41	46	12	47	1	18	52	15
7	0	42	37	6	47	51	12	53	6	18	58	20
8	0	48	42	6	53	56	12	59	11	19	4	26
9	0	54	47	7	0	2	13	5	16	19	10	31
10	1	0	52	7	6	7	13	11	21	19	16	36
11	1	6	58	7	12	12	13	17	27	19	22	41
12	1	13	3	7	18	17	13	23	32	19	28	47
13	1	19	8	7	24	23	13	29	37	19	34	52
14	1	25	13	7	30	28	13	35	42	19	40	57
15	1	31	19	7	36	33	13	41	48	19	47	2
16	1	37	24	7	42	38	13	47	53	19	53	7
17	1	43	29	7	48	44	13	53	58	19	59	13
18	1	49	34	7	54	49	14	0	3	20	5	18
19	1	55	40	8	0	54	14	6	9	20	11	23
20	2	1	45	8	6	59	14	12	14	20	17	28
21	2	7	50	8	13	5	14	18	19	20	23	34
22	2	13	55	8	19	10	14	24	24	20	29	39
23	2	20	1	8	25	15	14	30	30	20	35	44
24	2	26	6	8	31	20	14	36	35	20	41	49
25	2	32	11	8	37	26	14	42	40	20	47	55
26	2	38	16	8	43	31	14	48	45	20	54	0
27	2	44	22	8	49	36	14	54	51	21	0	5
28	2	50	27	8	55	41	15	0	56	21	6	10
29	2	56	32	9	1	47	15	7	1	21	12	16
30	3	2	37	9	7	52	15	13	6	21	18	21
31	3	8	43	9	13	57	15	19	12	21	24	26
32	3	14	48	9	20	2	15	25	17	21	30	31
33	3	20	53	9	26	8	15	31	22	21	36	37
34	3	26	58	9	32	13	15	37	27	21	42	42
35	3	33	3	9	38	18	15	43	33	21	48	47
36	3	39	9	9	44	23	15	49	38	21	54	52
37	3	45	14	9	50	28	15	55	43	22	0	58
38	3	51	19	9	56	34	16	1	48	22	7	3
39	3	57	24	10	2	39	16	7	54	22	13	8
40	4	3	30	10	8	44	16	13	59	22	19	13
41	4	9	35	10	14	49	16	20	4	22	25	19
42	4	15	40	10	20	55	16	26	9	22	31	24
43	4	21	45	10	27	0	16	32	14	22	37	29
44	4	27	51	10	33	5	16	38	20	22	43	34
45	4	33	56	10	39	10	16	44	25	22	49	39
46	4	40	1	10	45	16	16	50	30	22	55	45
47	4	46	6	10	51	21	16	56	35	23	1	50
48	4	52	12	10	57	26	17	2	41	23	7	55
49	4	58	17	11	3	31	17	8	46	23	14	0
50	5	4	22	11	9	37	17	14	51	23	20	6
51	5	10	27	11	15	42	17	20	56	23	26	11
52	5	16	33	11	21	47	17	27	2	23	32	16
53	5	22	38	11	27	52	17	33	7	23	38	21
54	5	28	43	11	33	58	17	39	12	23	44	27
55	5	34	48	11	40	3	17	45	17	23	50	32
56	5	40	54	11	46	8	17	51	23	23	56	37
57	5	46	59	11	52	13	17	57	28	24	2	42
58	5	53	4	11	58	19	18	3	33	24	8	48
59	5	59	9	12	4	24	18	9	38	24	14	53
60	6	5	15	12	10	29	18	15	44	24	20	58

s	m	s
+0.0	0	0
0.1	0	37
0.2	1	13
0.3	1	50
0.4	2	26
0.5	3	3
0.6	3	39
0.7	4	16
0.8	4	52
0.9	5	29

$$\log \frac{366.2422}{365.2422} = 0.0011874$$

Tafel Vb. Tafel zur Verwandlung der Sternzeit in mittlere Zeit.

s	−0m			−1m			−2m			−3m		
0	0h	0m	0s	6h	6m	15s	12h	12m	29s	18h	18m	44s
1	0	6	6	6	12	21	12	18	35	18	24	50
2	0	12	12	6	18	27	12	24	42	18	30	56
3	0	18	19	6	24	33	12	30	48	18	37	2
4	0	24	25	6	30	40	12	36	54	18	43	9
5	0	30	31	6	36	46	12	43	0	18	49	15
6	0	36	37	6	42	52	12	49	7	18	55	21
7	0	42	44	6	48	58	12	55	13	19	1	27
8	0	48	50	6	55	4	13	1	19	19	7	34
9	0	54	56	7	1	11	13	7	25	19	13	40
10	1	1	2	7	7	17	13	13	31	19	19	46
11	1	7	9	7	13	23	13	19	38	19	25	52
12	1	13	15	7	19	29	13	25	44	19	31	59
13	1	19	21	7	25	36	13	31	50	19	38	5
14	1	25	27	7	31	42	13	37	56	19	44	11
15	1	31	34	7	37	48	13	44	3	19	50	17
16	1	37	40	7	43	54	13	50	9	19	56	23
17	1	43	46	7	50	1	13	56	15	20	2	30
18	1	49	52	7	56	7	14	2	21	20	8	36
19	1	55	59	8	2	13	14	8	28	20	14	42
20	2	2	5	8	8	19	14	14	34	20	20	48
21	2	8	11	8	14	26	14	20	40	20	26	55
22	2	14	17	8	20	32	14	26	46	20	33	1
23	2	20	24	8	26	38	14	32	53	20	39	7
24	2	26	30	8	32	44	14	38	59	20	45	13
25	2	32	36	8	38	51	14	45	5	20	51	20
26	2	38	42	8	44	57	14	51	11	20	57	26
27	2	44	49	8	51	3	14	57	18	21	3	32
28	2	50	55	8	57	9	15	3	24	21	9	38
29	2	57	1	9	3	16	15	9	30	21	15	45
30	3	3	7	9	9	22	15	15	36	21	21	51
31	3	9	14	9	15	28	15	21	43	21	27	57
32	3	15	20	9	21	34	15	27	49	21	34	3
33	3	21	26	9	27	41	15	33	55	21	40	10
34	3	27	32	9	33	47	15	40	1	21	46	16
35	3	33	38	9	39	53	15	46	8	21	52	22
36	3	39	45	9	45	59	15	52	14	21	58	28
37	3	45	51	9	52	5	15	58	20	22	4	35
38	3	51	57	9	58	12	16	4	26	22	10	41
39	3	58	3	10	4	18	16	10	33	22	16	47
40	4	4	10	10	10	24	16	16	39	22	22	53
41	4	10	16	10	16	30	16	22	45	22	29	0
42	4	16	22	10	22	37	16	28	51	22	35	6
43	4	22	28	10	28	43	16	34	57	22	41	12
44	4	28	35	10	34	49	16	41	4	22	47	18
45	4	34	41	10	40	55	16	47	10	22	53	24
46	4	40	47	10	47	2	16	53	16	22	59	31
47	4	46	53	10	53	8	16	59	22	23	5	37
48	4	53	0	10	59	14	17	5	29	23	11	43
49	4	59	6	11	5	20	17	11	35	23	17	49
50	5	5	12	11	11	27	17	17	41	23	23	56
51	5	11	18	11	17	33	17	23	47	23	30	2
52	5	17	25	11	23	39	17	29	54	23	36	8
53	5	23	31	11	29	45	17	36	0	23	42	14
54	5	29	37	11	35	52	17	42	6	23	48	21
55	5	35	43	11	41	58	17	48	12	23	54	27
56	5	41	50	11	48	4	17	54	19	24	0	33
57	5	47	56	11	54	10	18	0	25	24	6	39
58	5	54	2	12	0	17	18	6	31	24	12	46
59	6	0	8	12	6	23	18	12	37	24	18	52
60	6	6	15	12	12	29	18	18	44	24	24	58

s	m	s
−0.0	0	0
0.1	0	37
0.2	1	13
0.3	1	50
0.4	2	26
0.5	3	3
0.6	3	40
0.7	4	16
0.8	4	53
0.9	5	30

log 3609.8565 = 3.5574899
log 3600 = 3.5563025

Tafel VI.

Reduktion des Sinus auf den doppelten Bogen.

$$\log(\zeta - z)' = \log \sin \tfrac{1}{2}(\zeta - z) + M$$
$$\log(\zeta - z)'' = \log \sin \tfrac{1}{2}(\zeta - z) + S.$$

$\log \sin \frac{1}{2}(\zeta - z)$	M	$\log \sin \frac{1}{2}(\zeta - z)$	S
$-\infty$		$-\infty$	
	3.83730		5.61546
7.59507		8.06736	
	3.83731		5.61547
8.09325		8.21927	
	3.83732		5.61548
8.23252		8.30778	
	3.83733		5.61549
8.31668		8.37047	
	3.83734		5.61550
8.37717		8.41905	

Tafel VII.

Verwandlung von Stunden und Minuten in Dezimalteile des Tages.

0^h 0^m	$0^d.00$	4^h 48^m	$0^d.20$	9^h 36^m	$0^d.40$	14^h 24^m	$0^d.60$	19^h 12^m	$0^d.80$
14	01	5 2	21	50	41	38	61	26	81
29	02	17	22	10 5	42	53	62	41	82
43	03	31	23	19	43	15 7	63	55	83
58	04	46	24	34	44	22	64	20 10	84
1 12	0.05	6 0	0.25	48	0.45	36	0.65	24	0.85
26	06	14	26	11 2	46	50	66	38	86
41	07	29	27	17	47	16 5	67	53	87
55	08	43	28	31	48	19	68	21 7	88
2 10	09	58	29	46	49	34	69	22	89
24	0.10	7 12	0.30	12 0	0.50	48	0.70	36	0.90
38	11	26	31	14	51	17 2	71	50	91
53	12	41	32	29	52	17	72	22 5	92
3 7	13	55	33	43	53	31	73	19	93
22	14	8 10	34	58	54	46	74	34	94
36	0.15	24	0.35	13 12	0.55	18 0	0.75	48	0.95
50	16	38	36	26	56	14	76	23 2	96
4 5	17	53	37	41	57	29	77	17	97
19	18	9 7	38	55	58	43	78	31	98
34	19	22	39	14 10	59	58	79	46	99

Tafel VIII.

Zentrierrechnungen.

Die nachstehende Tafel dient zur Erleichterung von Zentrierrechnungen für exzentrisch beobachtete Richtungen.

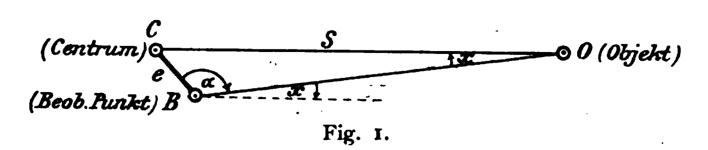


Fig. 1.

Die Zentrierung x einer exzentrisch beobachteten Richtung BO (Fig. 1) ist:

$$x'' = \frac{e \cdot \sin \alpha}{S \cdot \sin 1''},$$

in welcher Formel bedeuten: e die lineare Exzentrizität BC des Beobachtungspunktes B, S die Seite CO, α der im Beobachtungspunkt B rechts herum gemessene Winkel zwischen den Richtungen nach dem Zentrum der Station und nach dem Objekt, also $\sphericalangle\, CBO$.

Handelt es sich um die Zentrierung des Zielpunktes (siehe Fig. 2), so ist mit α zu bezeichnen der Winkel im angezielten Punkt Z zwischen der Richtung nach dem Zentrum C der angezielten Station und der zu zentrierenden Richtung ZB, also $\sphericalangle\, CZB$.

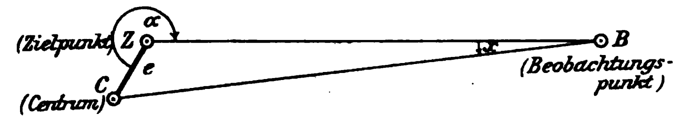


Fig. 2.

Die folgende Tafel A gibt den Wert $t'' = \frac{e}{S \cdot \sin 1''}$, mit den Eingängen e und $\log S$, Tafel B den Wert $\sin \alpha$. Um x zu erhalten, müssen daher diese beiden Werte miteinander multipliziert werden, was zweckmäßig mit Hilfe des Rechenschiebers ausgeführt wird.

Ferner ist noch zu bemerken:

Zu Tafel A ist als der eine Eingang der $\log S$ gewählt worden, weil meist dieser allein, nicht der Numerus der Seite S bekannt ist.

Tafel A enthält als Eingänge nur die Werte $3.00 < \log S < 4.00$ und $1\text{ dm} < e < 10\text{ dm}$.

t läßt sich indessen auch für alle übrigen möglichen Werte von $\log S$ und von e aus der Tafel A entnehmen, wobei folgendermaßen zu verfahren ist:

1. $e < 1\text{ dm}$ oder $e > 1\text{ m}$.

t wächst — praktisch genommen — proportional zu e. Das zu $e = 5\text{ m}$ gehörige t ist daher das Zehnfache des Wertes t für $e = 0.5\text{ m}$. Analog diesem Falle kann man t für jeden Wert von e finden.

Beispiel 1: $e = 3.42\text{ m}$, $\log S = 3.424$

für $e = 3.0$ m findet man $t = 233''$
» $e = 0.4$ m » » $t = 31$
» $e = 0.02$ m » » $t = 2$

für $e = 3.42$ m findet man $t = \mathbf{266''}$.

2. $\log S < 3.0$ oder $\log S > 4.0$

Ist die Kennziffer des $\log S$ 2 oder 4, so geht man mit der Kennziffer 3 und der unveränderten Mantisse von S in die Tafel. Den so gefundenen Wert von t hat man mit 10 zu multiplizieren, wenn die Kennziffer des $\log S$ 2 lautete, durch 10 zu dividieren bei der Kennziffer 4.

Beispiel 2: $e = 0.1\text{ m}$, $\log S = 2.725$

Unter $\log S = 3.725$ findet man $t = 3.9''$, also ist
für $\log S = 2.725$ der Wert $t = \mathbf{39''}$.

Das folgende Beispiel gibt eine Verbindung der soeben genannten Fälle 1 und 2:

Beispiel 3: $e = 2.36\text{ m}$, $\log S = 4.013$.

Unter $\log S = 3.013$ findet man:

für $e = 2.0$ m $t = 400''$
» $e = 0.3$ m $t = 60$
» $e = 0.03$ m $t = 12$

$t = 472''$ für $\log S = 3.013$,
also ist für $\log S = 4.013$ $t = \mathbf{47''}$.

Um das Vorzeichen der Zentrierung x richtig zu erhalten, ist es von der allergrößten Wichtigkeit, daß der Winkel α, von dessen Größe das Vorzeichen des $\sin\alpha$ abhängt, in der in Fig. 1 bzw. 2 bezeichneten Weise von der Richtung BC bzw. ZC rechts herum gezählt wird.



Aus Tafel B erhält man beim Eingang mit diesem $\measuredangle\ \alpha$ das Vorzeichen, mit welchem x auf die zu zentrierende Richtung angewendet werden soll.

Beispiel 1: $t = 266''$, $\alpha = 197°$.
Tafel B gibt $sin\ \alpha = -0.30$,
(nach Rechenschieber) $x = t \cdot sin\ \alpha = -80'' = -1.3'$
Beispiel 2: $t = 39''$, $\alpha = 128°$
$sin\ \alpha = +0.79$, $x = +31'' = +0.5'$.
Beispiel 3: $t = 47''$, $\alpha = 287°$,
$sin\ \alpha = -0.95$, $x = -45'' = -0.7'$.

Das hier angegebene Verfahren ist für die Forderungen der Küstenvermessung (Ergebnisse in Zehntel-Bogenminuten) völlig genau genug, selbst wenn in seltenen Fällen einmal bei großer Exzentrizität und Seiten unter 1 km die aus Tafel A zu entnehmende Zahl mit 100 multipliziert werden müßte.

Im übrigen sei bemerkt, daß der Gebrauch dieser Zentriertafeln gegenüber der logarithmischen Zentrierrechnung keine Beschleunigung darstellt. Trotzdem wird die Tafel mit Vorteil verwendet werden, weil den bei logarithmischen Rechnungen von Ungeübten häufig gemachten Fehlern die hier gegebene Anordnung, besonders der Tafel B, vorgebeugt wird.

Tafel A. $t'' = \dfrac{e}{S \cdot \sin 1''}$

log S \ e in Metern	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	e in Metern / log S
	"	"	"	"	"	"	"	"	"	"	
3.00	20.6	41.2	61.8	82.5	103.1	123.8	144.4	165.0	185.6	206.3	3.00
3.01	20.2	40.3	60.5	80.6	100.8	120.9	141.1	161.2	181.4	201.6	3.01
3.02	19.7	39.4	59.1	78.8	98.5	118.1	137.8	157.5	177.2	197.0	3.02
3.03	19.2	38.5	57.8	77.0	96.3	115.5	134.7	154.0	173.2	192.5	3.03
3.04	18.8	37.6	56.4	75.2	94.0	112.8	131.6	150.4	169.2	188.1	3.04
3.05	18.4	36.8	55.1	73.5	91.9	110.2	128.6	147.0	165.4	183.8	3.05
3.06	18.0	35.9	53.9	71.9	89.8	107.8	125.7	143.7	161.7	179.6	3.06
3.07	17.6	35.1	52.7	70.2	87.8	105.2	122.8	140.4	158.0	175.6	3.07
3.08	17.2	34.3	51.5	68.2	85.8	102.9	120.1	137.2	154.4	171.6	3.08
3.09	16.8	33.6	50.3	67.1	83.8	100.6	117.3	134.1	150.9	167.7	3.09
3.10	16.4	32.8	49.2	65.5	81.9	98.2	114.6	131.0	147.4	163.8	3.10
3.11	16.0	32.0	48.0	64.0	80.0	96.1	112.1	128.1	144.1	160.1	3.11
3.12	15.6	31.3	46.9	62.6	78.2	93.9	109.5	125.1	140.8	156.5	3.12
3.13	15.3	30.6	45.9	61.2	76.5	91.7	107.0	122.3	137.6	152.9	3.13
3.14	14.9	29.9	44.8	59.8	74.7	89.7	104.6	119.5	134.4	149.4	3.14
3.15	14.6	29.2	43.8	58.4	73.0	87.6	102.2	116.8	131.4	146.0	3.15
3.16	14.3	28.5	42.8	57.1	71.3	85.6	99.8	114.1	128.4	142.7	3.16
3.17	13.9	27.9	41.8	55.8	69.7	83.7	97.6	111.5	125.5	139.4	3.17
3.18	13.6	27.3	40.9	54.6	68.2	81.8	95.5	109.1	122.7	136.3	3.18
3.19	13.3	26.7	40.0	53.3	66.7	80.0	93.3	106.6	119.9	133.2	3.19
3.20	13.0	26.0	39.0	52.0	65.0	78.1	91.1	104.1	117.1	130.1	3.20
3.21	12.7	25.4	38.2	50.9	63.6	76.3	89.0	101.7	114.5	127.2	3.21
3.22	12.4	24.9	37.4	49.8	62.2	74.6	87.1	99.5	111.9	124.3	3.22
3.23	12.2	24.3	36.5	48.7	60.8	73.9	85.1	97.2	109.4	121.5	3.23
3.24	11.9	23.7	35.6	47.5	59.3	71.2	83.1	94.9	106.8	118.7	3.24
3.25	11.6	23.2	34.8	46.4	58.0	69.6	81.2	92.8	104.4	116.0	3.25
3.26	11.3	22.7	34.0	45.4	56.7	68.1	79.4	90.8	101.1	113.4	3.26
3.27	11.1	22.2	33.2	44.4	55.4	66.5	77.6	88.7	99.7	110.8	3.27
3.28	10.8	21.6	32.4	43.3	54.1	64.9	75.8	86.6	97.4	108.2	3.28
3.29	10.6	21.2	31.8	42.3	52.9	63.5	74.0	84.6	95.2	105.8	3.29
3.30	10.3	20.7	31.0	41.4	51.7	62.0	72.3	82.7	93.1	103.4	3.30
3.31	10.1	20.2	30.3	40.4	50.5	60.6	70.7	80.8	90.9	101.0	3.31
3.32	9.9	19.7	29.6	39.5	49.4	59.2	69.6	79.0	88.8	98.7	3.32
3.33	9.6	19.3	29.0	38.6	48.2	57.9	67.6	77.2	86.8	96.5	3.33
3.34	9.4	18.9	28.3	37.7	47.1	56.5	66.0	75.4	84.8	94.3	3.34
3.35	9.2	18.4	27.6	36.8	46.1	55.3	64.5	73.7	82.9	92.1	3.35
3.36	9.0	18.0	27.0	36.0	45.0	54.0	63.0	72.0	81.0	90.0	3.36
3.37	8.8	17.6	26.4	35.2	44.0	52.8	61.6	70.4	79.2	88.0	3.37
3.38	8.6	17.2	25.8	34.4	43.0	51.6	60.2	68.8	77.4	86.0	3.38
3.39	8.4	16.8	25.2	33.6	42.0	50.4	58.8	67.2	75.6	84.0	3.39
3.40	8.2	16.4	24.6	32.8	41.0	49.2	57.5	65.7	73.9	82.1	3.40
3.41	8.0	16.0	24.1	32.1	40.0	48.1	56.2	64.2	72.2	80.2	3.41
3.42	7.8	15.7	23.5	31.4	39.2	47.0	54.8	62.7	70.6	78.4	3.42
3.43	7.7	15.3	23.0	30.7	38.3	46.0	53.6	61.3	69.0	76.6	3.43
3.44	7.5	15.0	22.5	30.0	37.4	44.9	52.4	59.9	67.4	74.9	3.44
3.45	7.3	14.6	22.0	29.3	36.6	43.9	51.2	58.5	65.9	73.2	3.45
3.46	7.2	14.3	21.5	28.6	35.8	42.9	50.1	57.2	64.4	71.5	3.46
3.47	7.0	14.0	21.0	28.0	35.0	41.9	48.9	55.9	62.9	69.9	3.47
3.48	6.8	13.6	20.5	27.3	34.2	41.0	47.8	54.6	61.5	68.3	3.48
3.49	6.7	13.3	20.0	26.7	33.4	40.1	46.7	53.4	59.1	66.7	3.49
3.50	6.5	13.0	19.6	26.1	32.6	39.1	45.6	52.2	58.7	65.2	3.50

Tafel A. $t'' = \frac{e}{S \cdot \sin 1''}$

e in Metern / log S	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	e in Metern / log S
	"	"	"	"	"	"	"	"	"	"	
3.50	6.5	13.0	19.6	26.1	32.6	39.1	45.6	52.2	58.7	65.2	3.50
3.51	6.4	12.7	19.1	25.5	31.9	38.2	44.6	51.0	57.3	63.7	3.51
3.52	6.2	12.4	18.7	24.9	31.1	37.4	43.6	49.8	56.0	62.3	3.52
3.53	6.1	12.2	18.3	24.4	30.4	36.5	42.6	48.7	54.8	60.9	3.53
3.54	5.9	11.9	17.8	23.8	29.7	35.7	41.6	47.6	53.5	59.5	3.54
3.55	5.8	11.6	17.4	23.2	29.1	34.9	40.7	46.5	52.3	58.1	3.55
3.56	5.7	11.4	17.0	22.7	28.4	34.1	39.8	45.4	51.1	56.8	3.56
3.57	5.6	11.1	16.6	22.2	27.8	33.3	38.9	44.4	50.0	55.5	3.57
3.58	5.4	10.8	16.2	21.7	27.1	32.5	38.0	43.4	48.8	54.2	3.58
3.59	5.3	10.6	15.9	21.2	26.5	31.8	37.1	42.4	47.7	53.0	3.59
3.60	5.2	10.4	15.5	20.7	25.9	31.1	36.3	41.4	46.6	51.8	3.60
3.61	5.1	10.1	15.2	20.2	25.3	30.4	35.4	40.5	45.5	50.6	3.61
3.62	5.0	9.9	14.8	19.8	24.7	29.7	34.6	39.6	44.5	49.5	3.62
3.63	4.8	9.7	14.5	19.4	24.2	29.0	33.8	38.7	43.5	48.4	3.63
3.64	4.7	9.5	14.2	18.9	23.6	28.4	33.1	37.9	42.6	47.3	3.64
3.65	4.6	9.2	13.9	18.5	23.1	27.7	32.3	36.9	41.6	46.2	3.65
3.66	4.5	9.0	13.5	18.0	22.6	27.1	31.6	36.1	40.6	45.1	3.66
3.67	4.4	8.8	13.2	17.6	22.0	26.5	30.9	35.3	39.7	44.1	3.67
3.68	4.3	8.6	12.9	17.2	21.5	25.9	30.2	34.5	38.8	43.1	3.68
3.69	4.2	8.4	12.6	16.8	21.1	25.3	29.5	33.7	37.9	42.1	3.69
3.70	4.1	8.2	12.3	16.4	20.6	24.7	28.8	32.9	37.0	41.2	3.70
3.71	4.0	8.0	12.1	16.1	20.1	24.1	28.1	32.2	36.2	40.2	3.71
3.72	3.9	7.9	11.8	15.7	19.6	23.6	27.5	31.4	35.4	39.3	3.72
3.73	3.8	7.7	11.5	15.3	19.2	23.0	26.9	30.7	34.6	38.4	3.73
3.74	3.8	7.5	11.2	15.0	18.8	22.5	26.2	30.0	33.8	37.5	3.74
3.75	3.7	7.3	11.0	14.7	18.3	22.0	25.6	29.3	33.0	36.7	3.75
3.76	3.6	7.2	10.7	14.3	17.9	21.5	25.0	28.6	32.2	35.8	3.76
3.77	3.5	7.0	10.5	14.0	17.5	21.0	24.4	28.0	31.5	35.0	3.77
3.78	3.4	6.8	10.3	13.7	17.1	20.5	23.9	27.4	30.8	34.2	3.78
3.79	3.3	6.7	10.0	13.4	16.7	20.1	23.4	26.8	30.1	33.5	3.79
3.80	3.3	6.5	9.8	13.1	16.3	19.6	22.9	26.2	29.4	32.7	3.80
3.81	3.2	6.4	9.6	12.8	16.0	19.2	22.4	25.6	28.8	32.0	3.81
3.82	3.1	6.2	9.4	12.5	15.6	18.7	21.9	25.0	28.1	31.2	3.82
3.83	3.0	6.1	9.2	12.2	15.3	18.3	21.4	24.4	27.4	30.5	3.83
3.84	3.0	6.0	8.9	11.9	14.9	17.9	20.9	23.8	26.8	29.8	3.84
3.85	2.9	5.8	8.7	11.7	14.6	17.5	20.4	23.3	26.2	29.1	3.85
3.86	2.8	5.7	8.5	11.4	14.2	17.1	19.9	22.8	25.6	28.5	3.86
3.87	2.8	5.6	8.3	11.1	13.9	16.7	19.5	22.2	25.0	27.8	3.87
3.88	2.7	5.4	8.2	10.9	13.6	16.3	19.0	21.8	24.5	27.2	3.88
3.89	2.7	5.3	8.0	10.6	13.3	16.0	18.6	21.2	23.9	26.6	3.89
3.90	2.6	5.2	7.8	10.4	13.0	15.6	18.2	20.8	23.4	26.0	3.90
3.91	2.5	5.1	7.6	10.2	12.7	15.2	17.8	20.3	22.8	25.4	3.91
3.92	2.5	5.0	7.4	9.9	12.4	14.9	17.4	19.8	22.3	24.8	3.92
3.93	2.4	4.8	7.3	9.7	12.1	14.5	17.0	19.4	21.8	24.2	3.93
3.94	2.4	4.7	7.1	9.5	11.8	14.2	16.6	18.9	21.3	23.7	3.94
3.95	2.3	4.6	6.9	9.2	11.6	13.9	16.2	18.5	20.8	23.1	3.95
3.96	2.3	4.5	6.8	9.0	11.3	13.6	15.8	18.1	20.3	22.6	3.96
3.97	2.2	4.4	6.6	8.8	11.0	13.3	15.5	17.7	19.9	22.1	3.97
3.98	2.2	4.3	6.5	8.6	10.8	13.0	15.1	17.3	19.4	21.6	3.98
3.99	2.1	4.2	6.3	8.4	10.6	12.7	14.8	16.9	19.0	21.1	3.99
4.00	2.1	4.1	6.2	8.2	10.3	12.4	14.4	16.5	18.6	20.6	4.00

Tafel B. sin α				
Winkel α = ∢ CBO oder ∢ CZB		sin α	Winkel α = ∢ CBO oder ∢ CZB	
0°	180°	+ 0.00 −	180°	360°
1	179	+ 0.02 −	181	359
2	178	+ 0.03 −	182	358
3	177	+ 0.05 −	183	357
4	176	+ 0.07 −	184	356
5	175	+ 0.09 −	185	355
6	174	+ 0.10 −	186	354
7	173	+ 0.12 −	187	353
8	172	+ 0.14 −	188	352
9	171	+ 0.16 −	189	351
10	170	+ 0.17 −	190	350
11	169	+ 0.19 −	191	349
12	168	+ 0.21 −	192	348
13	167	+ 0.22 −	193	347
14	166	+ 0.24 −	194	346
15	165	+ 0.26 −	195	345
16	164	+ 0.28 −	196	344
17	163	+ 0.29 −	197	343
18	162	+ 0.31 −	198	342
19	161	+ 0.33 −	199	341
20	160	+ 0.34 −	200	340
21	159	+ 0.36 −	201	339
22	158	+ 0.37 −	202	338
23	157	+ 0.39 −	203	337
24	156	+ 0.41 −	204	336
25	155	+ 0.42 −	205	335
26	154	+ 0.44 −	206	334
27	153	+ 0.45 −	207	333
28	152	+ 0.47 −	208	332
29	151	+ 0.48 −	209	331
30	150	+ 0.50 −	210	330
31	149	+ 0.52 −	211	329
32	148	+ 0.53 −	212	328
33	147	+ 0.54 −	213	327
34	146	+ 0.56 −	214	326
35	145	+ 0.57 −	215	325
36	144	+ 0.59 −	216	324
37	143	+ 0.60 −	217	323
38	142	+ 0.62 −	218	322
39	141	+ 0.63 −	219	321
40	140	+ 0.64 −	220	320
41	139	+ 0.66 −	221	319
42	138	+ 0.67 −	222	318
43	137	+ 0.68 −	223	317
44	136	+ 0.69 −	224	316
45	135	+ 0.71 −	225	315
46	134	+ 0.72 −	226	314
47	133	+ 0.73 −	227	313
48	132	+ 0.74 −	228	312
49	131	+ 0.75 −	229	311
50	130	+ 0.77 −	230	310

Tafel B. $\sin \alpha$

Winkel α $= \measuredangle CBO$ oder $\measuredangle CZB$		$\sin \alpha$	Winkel α $= \measuredangle CBO$ oder $\measuredangle CZB$	
50°	130°	+ 0.77 −	230°	310°
52	128	+ 0.79 −	232	308
54	126	+ 0.81 −	234	306
56	124	+ 0.83 −	236	304
58	122	+ 0.85 −	238	302
60	120	+ 0.87 −	240	300
62	118	+ 0.88 −	242	298
64	116	+ 0.90 −	244	296
66	114	+ 0.91 −	246	294
68	112	+ 0.93 −	248	292
70	110	+ 0.94 −	250	290
74	106	+ 0.96 −	254	286
78	102	+ 0.98 −	258	282
82	98	+ 0.99 −	262	278
86	94	+ 1.00 −	266	274
90	90	+ 1.00 −	270	270

C (Centrum)
B (Beob.Punkt)
O (Objekt)

Fig. 1.
Zentrierung
des Beobachtungspunktes.

C (Centrum)
Z (Zielpunkt)
B (Beobachtungs-punkt)

Fig. 2.
Zentrierung
des Zielpunktes.

Tafel IXa.

Berechnung der geographischen Koordinaten.

Werte: ***log [m]*** **und** ***log [n].***

$$[m] = \frac{\varrho''}{M} = \text{Meridian-Krümmungs-Koeffizient.}$$

$$[n] = \frac{\varrho''}{N} = \text{Querkrümmungs-Koeffizient.}$$

φ_1	*log [m]*	Diff.	*log [n]*	Diff.	φ_1	*log [m]*	Diff.	*log [n]*	Diff.
0°	8.512 69 −10	0	8.509 78 −10	0	30°	8.511 60 −10	6	8.509 42 −10	2
1	69	1	78	0	31	54	7	40	3
2	68	0	78	0	32	47	7	37	2
3	68	1	78	1	33	40	7	35	2
4	67	1	77	0	34	33	7	33	3
5	66	2	77	0	35	26	7	30	2
6	64	1	77	1	36	19	8	28	2
7	63	2	76	1	37	11	7	26	3
8	61	3	75	0	38	04	7	23	2
9	58	2	75	1	39	8.510 97	8	21	3
10	8.512 56	3	8.509 74	1	40	8.510 89	7	8.509 18	2
11	53	3	73	1	41	82	8	16	3
12	50	3	72	1	42	74	8	13	2
13	47	3	71	1	43	66	7	11	3
14	44	4	70	2	44	59	8	08	2
15	40	4	68	1	45	51	7	06	3
16	36	4	67	1	46	44	8	03	2
17	32	5	66	2	47	36	8	01	3
18	27	4	64	1	48	28	7	8.508 98	3
19	23	5	63	2	49	21	8	95	2
20	8.512 18	5	8.509 61	1	50	8.510 13	7	8.508 93	3
21	13	5	60	2	51	06	8	90	2
22	08	5	58	2	52	8.509 98	7	88	2
23	03	6	56	2	53	91	7	86	3
24	8.511 97	6	54	2	54	84	7	83	2
25	91	6	52	2	55	77	8	81	3
26	85	6	50	2	56	69	7	78	2
27	79	6	48	2	57	62	6	76	2
28	73	6	46	2	58	56	7	74	3
29	67	7	44	2	59	49	7	71	2
30	8.511 60		8.509 42		60	8.509 42		8.508 69	

P. P.

1	
30′	0 / 1

2	
20′	0 / 1
40′	1 / 2

3	
15′	0 / 1
30′	1 / 2
45′	2 / 3

4	
12′	0 / 1
24′	1 / 2
36′	2 / 3
48′	3 / 4

5	
10′	0 / 1
20′	1 / 2
30′	2 / 3
40′	3 / 4
50′	4 / 5

6	
8′ 34.3″	0 / 1
17′ 8.6″	1 / 2
25′ 42.9″	2 / 3
34′ 17.1″	3 / 4
42′ 51.4″	4 / 5
51′ 25.7″	5 / 6

7	
7′ 30″	0 / 1
15′ 0″	1 / 2
22′ 30″	2 / 3
30′ 0″	3 / 4
37′ 30″	4 / 5
45′ 0″	5 / 6
52′ 30″	6 / 7

8	
6′ 40″	0 / 1
13′ 20″	1 / 2
20′ 0″	2 / 3
26′ 40″	3 / 4
33′ 20″	4 / 5
40′ 0″	5 / 6
46′ 40″	6 / 7
53′ 20″	7 / 8

Tafel IXb.

Berechnung der geographischen Koordinaten.

Wert: *d*.

$$d = -{}^1/_4 \frac{N}{M} (\lambda_2 - \lambda_1)^2 \cdot sin^2 \varphi_h \cdot arc\ 1''$$

d ist auf { Nordbreite von φ_h zu subtrahieren, Südbreite zu φ_h zu addieren.

φ_h / $\lambda_2 - \lambda_1$	0°	10°	20°	30°	40°	50°	60°	φ_h / $\lambda_2 - \lambda_1$
	"	"	"	"	"	"	"	
1'	0	0	0	0	0	0	0	1'
2	0	0	0	0	0	0	0	2
3	0	0	0	0	0	0	0	3
4	0	0	0.1	0.1	0.1	0.1	0.1	4
5	0	0	0.1	0.1	0.1	0.1	0.1	5
6	0	0.1	0.1	0.1	0.2	0.2	0.1	6
7	0	0.1	0.1	0.2	0.2	0.2	0.2	7
8	0	0.1	0.2	0.2	0.3	0.3	0.2	8
9	0	0.1	0.2	0.3	0.4	0.4	0.3	9
10	0	0.2	0.3	0.4	0.4	0.4	0.4	10
11	0	0.2	0.3	0.5	0.5	0.5	0.5	11
12	0	0.2	0.4	0.6	0.6	0.6	0.6	12
13	0	0.3	0.5	0.6	0.7	0.7	0.6	13
14	0	0.3	0.6	0.7	0.8	0.8	0.7	14
15	0	0.3	0.6	0.9	1.0	1.0	0.9	15
16	0	0.4	0.7	1.0	1.1	1.1	1.0	16
17	0	0.4	0.8	1.1	1.2	1.2	1.1	17
18	0	0.5	0.9	1.2	1.4	1.4	1.2	18
19	0	0.5	1.0	1.4	1.6	1.6	1.4	19
20	0	0.6	1.1	1.5	1.7	1.7	1.5	20
21	0	0.7	1.2	1.7	1.9	1.9	1.7	21
22	0	0.7	1.4	1.8	2.1	2.1	1.8	22
23	0	0.8	1.5	2.0	2.3	2.3	2.0	23
24	0	0.9	1.6	2.2	2.5	2.5	2.2	24
25	0	0.9	1.8	2.4	2.7	2.7	2.4	25
26	0	1.0	1.9	2.6	2.9	2.9	2.6	26
27	0	1.1	2.1	2.8	3.1	3.1	2.8	27
28	0	1.2	2.2	3.0	3.4	3.4	3.0	28
29	0	1.3	2.4	3.2	3.6	3.6	3.2	29
30	0	1.4	2.5	3.4	3.9	3.9	3.4	30

Tafel IX c.

Berechnung der geographischen Koordinaten.

Meridiankonvergenz *t*.

$$t = (\lambda_2 - \lambda_1) \cdot \sin \varphi_h.$$

t hat auf $\left\{ \begin{array}{l} \text{Nordbreite gleiches} \\ \text{Südbreite entgegengesetztes} \end{array} \right\}$ Vorzeichen wie *sin Az AB*.

$\lambda_2-\lambda_1$ / φ_h	0′	1′	2′	3′	4′	5′	6′	7′	8′	9′	10′	$\lambda_2-\lambda_1$ / φ_h
°	′	′	′	′	′	′	′	′	′	′	′	°
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	1
2	0	0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	2
3	0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	3
4	0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.7	4
5	0	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	5
6	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	6
7	0	0.1	0.2	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.2	7
8	0	0.1	0.3	0.4	0.6	0.7	0.8	1.0	1.1	1.3	1.4	8
9	0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.3	1.4	1.6	9
10	0	0.2	0.3	0.5	0.7	0.9	1.0	1.2	1.4	1.6	1.7	10
11	0	0.2	0.4	0.6	0.8	1.0	1.1	1.3	1.5	1.7	1.9	11
12	0	0.2	0.4	0.6	0.8	1.0	1.2	1.5	1.7	1.9	2.1	12
13	0	0.2	0.4	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2	13
14	0	0.2	0.5	0.7	1.0	1.2	1.5	1.7	1.9	2.2	2.4	14
15	0	0.3	0.5	0.8	1.0	1.3	1.6	1.8	2.1	2.3	2.6	15
16	0	0.3	0.6	0.8	1.1	1.4	1.7	1.9	2.2	2.5	2.8	16
17	0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.3	2.6	2.9	17
18	0	0.3	0.6	0.9	1.2	1.5	1.9	2.2	2.5	2.8	3.1	18
19	0	0.3	0.7	1.0	1.3	1.6	2.0	2.3	2.6	2.9	3.3	19
20	0	0.3	0.7	1.0	1.4	1.7	2.1	2.4	2.7	3.1	3.4	20
21	0	0.4	0.7	1.1	1.4	1.8	2.2	2.5	2.9	3.2	3.6	21
22	0	0.4	0.7	1.1	1.5	1.9	2.2	2.6	3.0	3.4	3.7	22
23	0	0.4	0.8	1.2	1.6	2.0	2.3	2.7	3.1	3.5	3.9	23
24	0	0.4	0.8	1.2	1.6	2.0	2.4	2.8	3.2	3.7	4.1	24
25	0	0.4	0.8	1.3	1.7	2.1	2.5	3.0	3.4	3.8	4.2	25
26	0	0.4	0.9	1.3	1.8	2.2	2.6	3.1	3.5	3.9	4.4	26
27	0	0.5	0.9	1.4	1.8	2.3	2.7	3.2	3.6	4.1	4.5	27
28	0	0.5	0.9	1.4	1.9	2.3	2.8	3.3	3.8	4.2	4.7	28
29	0	0.5	1.0	1.5	1.9	2.4	2.9	3.4	3.9	4.4	4.8	29
30	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	30
31	0	0.5	1.0	1.5	2.1	2.6	3.1	3.6	4.1	4.6	5.2	31
32	0	0.5	1.1	1.6	2.1	2.6	3.2	3.7	4.2	4.8	5.3	32
33	0	0.5	1.1	1.6	2.2	2.7	3.3	3.8	4.4	4.9	5.4	33
34	0	0.6	1.1	1.7	2.2	2.8	3.4	3.9	4.5	5.0	5.6	34
35	0	0.6	1.1	1.7	2.3	2.9	3.4	4.0	4.6	5.2	5.7	35
36	0	0.6	1.2	1.8	2.4	2.9	3.5	4.1	4.7	5.3	5.9	36
37	0	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	37
38	0	0.6	1.2	1.8	2.5	3.1	3.7	4.3	4.9	5.5	6.2	38
39	0	0.6	1.3	1.9	2.5	3.1	3.8	4.4	5.0	5.7	6.3	39
40	0	0.6	1.3	1.9	2.6	3.2	3.9	4.5	5.1	5.8	6.4	40
41	0	0.7	1.3	2.0	2.6	3.3	3.9	4.6	5.2	5.9	6.6	41
42	0	0.7	1.3	2.0	2.7	3.3	4.0	4.7	5.4	6.0	6.7	42
43	0	0.7	1.4	2.0	2.7	3.4	4.1	4.8	5.5	6.1	6.8	43
44	0	0.7	1.4	2.1	2.8	3.5	4.2	4.9	5.6	6.3	6.9	44
45	0	0.7	1.4	2.1	2.8	3.5	4.2	4.9	5.7	6.4	7.1	45
46	0	0.7	1.4	2.2	2.9	3.6	4.3	5.0	5.8	6.5	7.2	46
47	0	0.7	1.5	2.2	2.9	3.7	4.4	5.1	5.8	6.6	7.3	47
48	0	0.7	1.5	2.2	3.0	3.7	4.5	5.2	5.9	6.7	7.4	48
49	0	0.8	1.5	2.3	3.0	3.8	4.5	5.3	6.0	6.8	7.5	49
50	0	0.8	1.5	2.3	3.1	3.8	4.6	5.4	6.1	6.9	7.7	50
51	0	0.8	1.6	2.3	3.1	3.9	4.7	5.4	6.2	7.0	7.8	51
52	0	0.8	1.6	2.4	3.2	3.9	4.7	5.5	6.3	7.1	7.9	52
53	0	0.8	1.6	2.4	3.2	4.0	4.8	5.6	6.4	7.2	8.0	53
54	0	0.8	1.6	2.4	3.2	4.0	4.9	5.7	6.5	7.3	8.1	54
55	0	0.8	1.6	2.5	3.3	4.1	4.9	5.7	6.5	7.4	8.2	55
56	0	0.8	1.7	2.5	3.3	4.1	5.0	5.8	6.6	7.5	8.3	56
57	0	0.8	1.7	2.5	3.4	4.2	5.0	5.9	6.7	7.6	8.4	57
58	0	0.8	1.7	2.5	3.4	4.2	5.1	5.9	6.8	7.6	8.5	58
59	0	0.9	1.7	2.6	3.4	4.3	5.1	6.0	6.9	7.7	8.6	59
60	0	0.9	1.7	2.6	3.5	4.3	5.2	6.1	6.9	7.8	8.7	60

$\lambda_2-\lambda_1$ / φ_h	10′	11′	12′	13′	14′	15′	16′	17′	18′	19′	20′	$\lambda_2-\lambda_1$ / φ_h
°	′	′	′	′	′	′	′	′	′	′	′	°
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	1
2	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	2
3	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.0	3
4	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.3	1.4	4
5	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.7	5
6	1.0	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	6
7	1.2	1.3	1.5	1.6	1.7	1.8	2.0	2.1	2.2	2.3	2.4	7
8	1.4	1.5	1.7	1.8	1.9	2.1	2.2	2.4	2.5	2.6	2.8	8
9	1.6	1.7	1.9	2.0	2.2	2.3	2.5	2.7	2.8	3.0	3.1	9
10	1.7	1.9	2.1	2.3	2.4	2.6	2.8	3.0	3.1	3.3	3.5	10
11	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.2	3.4	3.6	3.8	11
12	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5	3.7	4.0	4.2	12
13	2.2	2.5	2.7	2.9	3.1	3.4	3.6	3.8	4.0	4.3	4.5	13
14	2.4	2.7	2.9	3.1	3.4	3.6	3.9	4.1	4.4	4.6	4.8	14
15	2.6	2.8	3.1	3.4	3.6	3.9	4.1	4.4	4.7	4.9	5.2	15
16	2.8	3.0	3.3	3.6	3.9	4.1	4.4	4.7	5.0	5.2	5.5	16
17	2.9	3.2	3.5	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.8	17
18	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.3	5.6	5.9	6.2	18
19	3.3	3.6	3.9	4.2	4.6	4.9	5.2	5.5	5.9	6.2	6.5	19
20	3.4	3.8	4.1	4.4	4.8	5.1	5.5	5.8	6.2	6.5	6.8	20
21	3.6	3.9	4.3	4.7	5.0	5.4	5.7	6.1	6.5	6.8	7.2	21
22	3.7	4.1	4.5	4.9	5.2	5.6	6.0	6.4	6.7	7.1	7.5	22
23	3.9	4.3	4.7	5.1	5.5	5.9	6.3	6.6	7.0	7.4	7.8	23
24	4.1	4.5	4.9	5.3	5.7	6.1	6.5	6.9	7.3	7.7	8.1	24
25	4.2	4.7	5.1	5.5	5.9	6.3	6.8	7.2	7.6	8.0	8.5	25
26	4.4	4.8	5.3	5.7	6.1	6.6	7.0	7.5	7.9	8.3	8.8	26
27	4.5	5.0	5.4	5.9	6.4	6.8	7.3	7.7	8.2	8.6	9.1	27
28	4.7	5.2	5.6	6.1	6.6	7.0	7.5	8.0	8.5	8.9	9.4	28
29	4.8	5.3	5.8	6.3	6.8	7.3	7.8	8.2	8.7	9.2	9.7	29
30	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	30
31	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.8	9.3	9.8	10.3	31
32	5.3	5.8	6.4	6.9	7.4	7.9	8.5	9.0	9.5	10.1	10.6	32
33	5.4	6.0	6.5	7.1	7.6	8.2	8.7	9.3	9.8	10.3	10.9	33
34	5.6	6.2	6.7	7.3	7.8	8.4	8.9	9.5	10.1	10.6	11.2	34
35	5.7	6.3	6.9	7.5	8.0	8.6	9.2	9.8	10.3	10.9	11.5	35
36	5.9	6.5	7.1	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	36
37	6.0	6.6	7.2	7.8	8.4	9.0	9.6	10.2	10.8	11.4	12.0	37
38	6.2	6.8	7.4	8.0	8.6	9.2	9.9	10.5	11.1	11.7	12.3	38
39	6.3	6.9	7.6	8.2	8.8	9.4	10.1	10.7	11.3	12.0	12.6	39
40	6.4	7.1	7.7	8.4	9.0	9.6	10.3	10.9	11.6	12.2	12.9	40
41	6.6	7.2	7.9	8.5	9.2	9.8	10.5	11.1	11.8	12.5	13.1	41
42	6.7	7.4	8.0	8.7	9.4	10.0	10.7	11.4	12.0	12.7	13.4	42
43	6.8	7.5	8.2	8.9	9.5	10.2	10.9	11.6	12.3	13.0	13.6	43
44	6.9	7.6	8.3	9.0	9.7	10.4	11.1	11.8	12.5	13.2	13.9	44
45	7.1	7.8	8.5	9.2	9.9	10.6	11.3	12.0	12.7	13.4	14.1	45
46	7.2	7.9	8.6	9.3	10.1	10.8	11.5	12.2	12.9	13.7	14.4	46
47	7.3	8.0	8.8	9.5	10.2	11.0	11.7	12.4	13.2	13.9	14.6	47
48	7.4	8.2	8.9	9.7	10.4	11.1	11.9	12.6	13.4	14.1	14.9	48
49	7.5	8.3	9.1	9.8	10.6	11.3	12.1	12.8	13.6	14.3	15.1	49
50	7.7	8.4	9.2	10.0	10.7	11.5	12.3	13.0	13.8	14.6	15.3	50
51	7.8	8.5	9.3	10.1	10.9	11.6	12.4	13.2	14.0	14.8	15.5	51
52	7.9	8.7	9.5	10.2	11.0	11.8	12.6	13.4	14.2	15.0	15.8	52
53	8.0	8.8	9.6	10.4	11.2	12.0	12.8	13.6	14.4	15.2	16.0	53
54	8.1	8.9	9.7	10.5	11.3	12.1	12.9	13.8	14.6	15.4	16.2	54
55	8.2	9.0	9.8	10.6	11.5	12.3	13.1	13.9	14.7	15.6	16.4	55
56	8.3	9.1	10.0	10.8	11.6	12.4	13.3	14.1	14.9	15.8	16.6	56
57	8.4	9.2	10.1	10.9	11.7	12.6	13.4	14.3	15.1	15.9	16.8	57
58	8.5	9.3	10.2	11.0	11.9	12.7	13.6	14.4	15.3	16.1	17.0	58
59	8.6	9.4	10.3	11.1	12.0	12.8	13.7	14.6	15.4	16.3	17.1	59
60	8.7	9.5	10.4	11.3	12.1	13.0	13.9	14.7	15.6	16.5	17.3	60

φ_h \ $\lambda_2-\lambda_1$	20′	21′	22′	23′	24′	25′	26′	27′	28′	29′	30′	$\lambda_2-\lambda_1$ / φ_h
°	′	′	′	′	′	′	′	′	′	′	′	°
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	1
2	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	2
3	1.0	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.5	1.6	3
4	1.4	1.5	1.5	1.6	1.7	1.7	1.8	1.9	2.0	2.0	2.1	4
5	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.4	2.5	2.6	5
6	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	6
7	2.4	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.4	3.5	3.7	7
8	2.8	2.9	3.1	3.2	3.3	3.5	3.6	3.8	3.9	4.0	4.2	8
9	3.1	3.3	3.4	3.6	3.8	3.9	4.1	4.2	4.4	4.5	4.7	9
10	3.5	3.6	3.8	4.0	4.2	4.3	4.5	4.7	4.9	5.0	5.2	10
11	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.3	5.5	5.7	11
12	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.2	12
13	4.5	4.7	4.9	5.2	5.4	5.6	5.8	6.1	6.3	6.5	6.7	13
14	4.8	5.1	5.3	5.6	5.8	6.0	6.3	6.5	6.8	7.0	7.3	14
15	5.2	5.4	5.7	6.0	6.2	6.5	6.7	7.0	7.2	7.5	7.8	15
16	5.5	5.8	6.1	6.3	6.6	6.9	7.2	7.4	7.7	8.0	8.3	16
17	5.8	6.1	6.4	6.7	7.0	7.3	7.6	7.9	8.2	8.5	8.8	17
18	6.2	6.5	6.8	7.1	7.4	7.7	8.0	8.3	8.7	9.0	9.3	18
19	6.5	6.8	7.2	7.5	7.8	8.1	8.5	8.8	9.1	9.4	9.8	19
20	6.8	7.2	7.5	7.9	8.2	8.6	8.9	9.2	9.6	9.9	10.3	20
21	7.2	7.5	7.9	8.2	8.6	9.0	9.3	9.7	10.0	10.4	10.8	21
22	7.5	7.9	8.2	8.6	9.0	9.4	9.7	10.1	10.5	10.9	11.2	22
23	7.8	8.2	8.6	9.0	9.4	9.8	10.2	10.5	10.9	11.3	11.7	23
24	8.1	8.5	8.9	9.4	9.8	10.2	10.6	11.0	11.4	11.8	12.2	24
25	8.5	8.9	9.3	9.7	10.1	10.6	11.0	11.4	11.8	12.3	12.7	25
26	8.8	9.2	9.6	10.1	10.5	11.0	11.4	11.8	12.3	12.7	13.2	26
27	9.1	9.5	10.0	10.4	10.9	11.3	11.8	12.3	12.7	13.2	13.6	27
28	9.4	9.9	10.3	10.8	11.3	11.7	12.2	12.7	13.1	13.6	14.1	28
29	9.7	10.2	10.7	11.1	11.6	12.1	12.6	13.1	13.6	14.1	14.5	29
30	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	30
31	10.3	10.8	11.3	11.8	12.4	12.9	13.4	13.9	14.4	14.9	15.5	31
32	10.6	11.1	11.7	12.2	12.7	13.2	13.8	14.3	14.8	15.4	15.9	32
33	10.9	11.4	12.0	12.5	13.1	13.6	14.2	14.7	15.2	15.8	16.3	33
34	11.2	11.7	12.3	12.9	13.4	14.0	14.5	15.1	15.7	16.2	16.8	34
35	11.5	12.0	12.6	13.2	13.8	14.3	14.9	15.5	16.1	16.6	17.2	35
36	11.8	12.3	12.9	13.5	14.1	14.7	15.3	15.9	16.5	17.0	17.6	36
37	12.0	12.6	13.2	13.8	14.4	15.0	15.6	16.2	16.9	17.5	18.1	37
38	12.3	12.9	13.5	14.2	14.8	15.4	16.0	16.6	17.2	17.9	18.5	38
39	12.6	13.2	13.8	14.5	15.1	15.7	16.4	17.0	17.6	18.2	18.9	39
40	12.9	13.5	14.1	14.8	15.4	16.1	16.7	17.4	18.0	18.6	19.3	40
41	13.1	13.8	14.4	15.1	15.7	16.4	17.0	17.7	18.4	19.0	19.7	41
42	13.4	14.1	14.7	15.4	16.1	16.7	17.4	18.1	18.7	19.4	20.1	42
43	13.6	14.3	15.0	15.7	16.4	17.0	17.7	18.4	19.1	19.8	20.5	43
44	13.9	14.6	15.3	16.0	16.7	17.4	18.1	18.8	19.4	20.2	20.8	44
45	14.1	14.8	15.6	16.3	17.0	17.7	18.4	19.1	19.8	20.5	21.2	45
46	14.4	15.1	15.8	16.5	17.3	18.0	18.7	19.4	20.1	20.8	21.6	46
47	14.6	15.4	16.1	16.8	17.5	18.3	19.0	19.8	20.5	21.2	21.9	47
48	14.9	15.6	16.3	17.1	17.8	18.6	19.3	20.1	20.8	21.5	22.3	48
49	15.1	15.8	16.6	17.4	18.1	18.9	19.6	20.4	21.1	21.9	22.6	49
50	15.3	16.1	16.8	17.6	18.4	19.2	19.9	20.7	21.4	22.2	23.0	50
51	15.5	16.3	17.1	17.9	18.6	19.4	20.2	21.0	21.8	22.5	23.3	51
52	15.8	16.5	17.3	18.1	18.9	19.7	20.5	21.3	22.1	22.8	23.6	52
53	16.0	16.8	17.6	18.4	19.2	20.0	20.8	21.6	22.4	23.2	24.0	53
54	16.2	17.0	17.8	18.6	19.4	20.2	21.0	21.8	22.6	23.5	24.3	54
55	16.4	17.2	18.0	18.8	19.7	20.5	21.3	22.1	22.9	23.8	24.6	55
56	16.6	17.4	18.2	19.1	19.9	20.7	21.6	22.4	23.2	24.0	24.9	56
57	16.8	17.6	18.5	19.3	20.1	21.0	21.8	22.6	23.5	24.3	25.2	57
58	17.0	17.8	18.7	19.5	20.4	21.2	22.0	22.9	23.8	24.6	25.4	58
59	17.1	18.0	18.9	19.7	20.6	21.4	22.3	23.1	24.0	24.8	25.7	59
60	17.3	18.2	19.1	19.9	20.8	21.6	22.5	23.4	24.2	25.1	26.0	60

Tafel X.

Trigonometrische Höhenbestimmungen

$$h = S \cdot \text{tg}\ \alpha \quad + \text{Korr.}$$
$$h = S \cdot \text{cotg}\ z + \text{Korr.}$$

$$\text{Korr.} = \frac{1 - k}{2r} \cdot S^2$$

$$\log \frac{(1 - k)}{2r} = 2.8486 - 10.$$

S m	*log S*	Korr. m	*S* m	*log S*	Korr. m	*S* m	*log S*	Korr. m
		0.0			2.4			7.0
842	2.9252		5892	3.7703		10 030	4.0014	
		0.1			2.5			7
1458	3.1638		6012	3.7790		10 310	4.0132	
		0.2			2.6			8
1882	3.2746		6185	3.7913		10 970	4.0404	
		0.3			2.8			9
2227	3.3478		6410	3.8069		11 600	4.0646	
		0.4			3.0			10
2525	3.4023		6628	3.8214		12 200	4.0863	
		0.5			3.2			11
2792	3.4459		6839	3.8350		12 760	4.1060	
		0.6			3.4			12
3035	3.4822		7044	5.8478		13 310	4.1242	
		0.7			3.6			13
3260	3.5132		7241	3.8598		13 830	4.1408	
		0.8			3.8			14
3471	3.5404		7434	3.8712		14 340	4.1564	
		0.9			4.0			15
3669	3.5646		7622	3.8821		14 820	4.1708	
		1.0			4.2			16
3857	3.5863		7806	3.8924		15 290	4.1844	
		1.1			4.4			17
4036	3.6060		7986	3.9023		15 750	4.1972	
		1.2			4.6			18
4209	3.6242		8162	3.9118		16 190	4.2093	
		1.3			4.8			19
4373	3.6408		8333	3.9208		16 620	4.2207	
		1.4			5.0			20
4533	3.6564		8502	3.9295		17 050	4.2316	
		1.5			5.2			21
4686	3.6708		8666	3.9378		17 450	4.2419	
		1.6			5.4			22
4835	3.6844		8829	3.9459		17 860	4.2518	
		1.7			5.6			23
4980	3.6972		8987	3.9536		18 250	4.2612	
		1.8			5.8			24
5120	3.7093		9145	3.9612		18 630	4.2703	
		1.9			6.0			25
5256	3.7207		9298	3.9684		19 010	4.2790	
		2.0			6.2			26
5390	3.7316		9449	3.9754		19 380	4.2873	
		2.1			6.4			27
5520	3.7419		9598	3.9822		19 740	4.2954	
		2.2			6.6			28
5647	3.7518		9745	3.9888		20 100	4.3031	
		2.3			6.8			
5770	3.7612		9888	3.9951				

Tafel XI a.

Reduktion der Ablesungen des Quecksilberbarometers auf 0° Temperatur.

Für Messing-Skalenträger mit der Normaltemperatur 0°.

Korr. $= -0.000162 \cdot B \cdot t$ oder $-\frac{B \cdot t}{6170}$ (für Rechenschieber).

B = Barometerablesung, t = Temperatur des Quecksilbers.

t° Celsius	600	620	640	660	680	700	710	720	730	740	750	760	770	780	t° Celsius
	Barometerstand B in Millimetern														
1°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1
2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	2
3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	3
4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	4
5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5
6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	6
7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	7
8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	8
9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	9
10	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	2.2	1.3	10
11	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	11
12	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	12
13	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	13
14	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	14
15	1.5	1.5	1.6	1.6	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9	15
16	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.0	2.0	2.0	16
17	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	17
18	1.7	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	18
19	1.8	1.9	2.0	2.0	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	19
20	1.9	2.0	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.5	20
21	2.0	2.1	2.2	2.2	2.3	2.4	2.4	2.4	2.5	2.5	2.6	2.6	2.6	2.7	21
22	2.1	2.2	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.6	2.7	2.7	2.7	2.8	22
23	2.2	2.3	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.9	2.9	23
24	2.3	2.4	2.5	2.6	2.6	2.7	2.8	2.8	2.8	2.9	2.9	3.0	3.0	3.0	24
25	2.4	2.5	2.6	2.8	2.8	2.8	2.9	2.9	3.0	3.0	3.0	3.1	3.1	3.2	25
26	2.5	2.6	2.7	2.8	2.9	2.9	3.0	3.0	3.1	3.1	3.2	3.2	3.2	3.3	26
27	2.6	2.7	2.8	2.9	3.0	3.1	3.1	3.1	3.2	3.2	3.3	3.3	3.4	3.4	27
28	2.7	2.8	2.9	3.0	3.1	3.2	3.2	3.3	3.3	3.4	3.4	3.5	3.5	3.5	28
29	2.8	2.9	3.0	3.1	3.2	3.3	3.3	3.4	3.4	3.5	3.5	3.6	3.6	3.7	29
30	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.5	3.5	3.6	3.6	3.7	3.7	3.8	30
31	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.6	3.7	3.7	3.8	3.8	3.9	3.9	31
32	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.7	3.8	3.8	3.9	3.9	4.0	4.0	32
33	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.8	3.9	4.0	4.0	4.1	4.1	4.2	33
34	3.3	3.4	3.5	3.6	3.7	3.9	3.9	4.0	4.0	4.1	4.1	4.2	4.2	4.3	34
35	3.4	3.5	3.6	3.7	3.9	4.0	4.0	4.1	4.1	4.2	4.3	4.3	4.4	4.4	35

Tafel XIb.

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Barometrische Höhentafel.

Unter Zugrundelegung von Dr. W. JORDAN, »Barometrische Höhentafel für Hochgebirge«, für die Tropenzone berechnet.

B	Luft-Temperatur								Differenzen	
	− 10°	− 5°	0°	+ 5°	+ 10°	+ 15°	+ 20°	+ 25°	für 1 mm bei 0°	für 1°
mm	m	m	m	m	m	m	m	m	m	m
560	2399	2444	2490	2536	2581	2627	2672	2718	14.4	9.2
561	2385	2430	2476	2521	2566	2612	2657	2702	14.4	9.1
562	2371	2416	2462	2507	2551	2596	2642	2687	14.4	9.0
563	2358	2402	2447	2492	2537	2581	2626	2671	14.4	9.0
564	2344	2388	2433	2478	2522	2566	2611	2655	14.3	8.9
565	2329	2374	2418	2463	2507	2551	2596	2640	14.3	8.9
566	2315	2360	2404	2448	2492	2536	2580	2624	14.3	8.8
567	2302	2346	2390	2434	2478	2521	2565	2609	14.3	8.8
568	2288	2332	2376	2419	2463	2506	2549	2593	14.2	8.7
569	2275	2318	2361	2404	2448	2491	2534	2577	14.2	8.7
570	2261	2304	2347	2390	2433	2476	2519	2562	14.2	8.6
571	2248	2290	2333	2376	2418	2461	2504	2546	14.2	8.6
572	2234	2276	2318	2361	2404	2446	2489	2531	14.2	8.5
573	2220	2262	2304	2347	2389	2431	2474	2516	14.1	8.5
574	2207	2249	2290	2332	2374	2416	2458	2500	14.1	8.4
575	2193	2235	2276	2318	2360	2401	2443	2485	14.1	8.4
576	2179	2221	2262	2304	2346	2387	2428	2470	14.0	8.3
577	2166	2207	2248	2289	2331	2372	2413	2454	14.0	8.3
578	2152	2194	2235	2275	2316	2357	2398	2439	14.0	8.2
579	2139	2180	2221	2261	2301	2342	2383	2424	14.0	8.2
580	2126	2166	2207	2247	2287	2327	2368	2408	13.9	8.1
581	2112	2152	2192	2233	2273	2313	2353	2393	13.9	8.1
582	2099	2139	2178	2218	2258	2298	2338	2378	13.9	8.0
583	2086	2125	2164	2204	2244	2284	2323	2363	13.9	8.0
584	2072	2112	2151	2190	2230	2269	2308	2348	13.8	7.9
585	2059	2098	2137	2176	2216	2255	2293	2332	13.8	7.9
586	2046	2084	2123	2162	2201	2240	2279	2317	13.8	7.8
587	2033	2071	2110	2148	2187	2226	2264	2302	13.8	7.8
588	2019	2057	2096	2134	2173	2211	2249	2287	13.7	7.7
589	2006	2043	2082	2120	2158	2196	2235	2273	13.7	7.7
590	1992	2030	2068	2106	2144	2182	2220	2258	13.7	7.6
591	1979	2017	2054	2092	2130	2167	2205	2243	13.7	7.6
592	1966	2003	2041	2078	2116	2153	2190	2228	13.7	7.5
593	1953	1990	2027	2064	2102	2139	2176	2213	13.6	7.5
594	1940	1977	2014	2050	2087	2124	2161	2198	13.6	7.4
595	1927	1964	2000	2036	2073	2110	2146	2183	13.6	7.4
596	1914	1950	1987	2023	2059	2096	2132	2168	13.6	7.3
597	1901	1936	1973	2009	2045	2082	2118	2153	13.5	7.3
598	1887	1923	1959	1995	2031	2067	2103	2139	13.5	7.2
599	1874	1910	1946	1982	2017	2052	2088	2124	13.5	7.2
600	1861	1897	1932	1968	2003	2038	2074	2110	13.5	7.1

B	Luft-Temperatur								Differenzen	
	− 5°	0°	+ 5°	+ 10°	+ 15°	+ 20°	+ 25°	+ 30°	für 1 mm bei 0°	für 1°
mm	m	m	m	m	m	m	m	m	m	m
600	1897	1932	1968	2003	2038	2074	2110	2145	13.5	7.1
601	1884	1919	1954	1989	2024	2059	2095	2130	13.5	7.1
602	1871	1905	1940	1975	2010	2045	2080	2115	13.4	7.0
603	1857	1892	1926	1961	1996	2030	2065	2100	13.4	7.0
604	1844	1879	1913	1947	1982	2016	2050	2085	13.4	6.9
605	1831	1865	1899	1933	1968	2002	2036	2070	13.4	6.9
606	1817	1852	1886	1920	1954	1988	2021	2055	13.3	6.8
607	1804	1838	1872	1906	1940	1974	2007	2040	13.3	6.8
608	1791	1825	1859	1892	1925	1959	1993	2026	13.3	6.7
609	1779	1812	1845	1878	1911	1944	1978	2011	13.3	6.7
610	1766	1799	1832	1865	1897	1930	1963	1996	13.2	6.6
611	1753	1785	1818	1851	1884	1916	1949	1982	13.2	6.6
612	1740	1772	1804	1837	1870	1902	1934	1967	13.2	6.5
613	1727	1759	1791	1823	1856	1888	1920	1952	13.2	6.5
614	1714	1746	1778	1810	1842	1874	1906	1937	13.2	6.4
615	1701	1733	1764	1796	1828	1860	1891	1923	13.1	6.4
616	1688	1720	1751	1782	1814	1846	1877	1908	13.1	6.3
617	1675	1707	1738	1769	1800	1832	1863	1894	13.1	6.2
618	1662	1694	1725	1755	1786	1817	1848	1879	13.1	6.2
619	1649	1680	1711	1742	1772	1803	1834	1865	13.1	6.1
620	1637	1667	1697	1728	1759	1789	1820	1851	13.0	6.1
621	1624	1654	1684	1715	1745	1775	1805	1836	13.0	6.0
622	1611	1641	1671	1702	1732	1761	1791	1821	13.0	6.0
623	1599	1628	1658	1688	1718	1748	1777	1807	13.0	5.9
624	1586	1615	1645	1674	1704	1734	1763	1792	13.0	5.9
625	1573	1602	1632	1661	1690	1720	1749	1778	12.9	5.8
626	1560	1589	1618	1647	1676	1706	1735	1764	12.9	5.8
627	1547	1576	1605	1634	1663	1692	1721	1750	12.9	5.7
628	1534	1563	1592	1620	1649	1678	1706	1735	12.9	5.7
629	1522	1550	1579	1607	1636	1664	1692	1721	12.9	5.6
630	1510	1537	1565	1593	1622	1650	1678	1707	12.8	5.6
631	1497	1525	1552	1580	1609	1637	1664	1692	12.8	5.5
632	1485	1512	1540	1568	1596	1623	1651	1678	12.8	5.5
633	1472	1499	1527	1555	1582	1609	1637	1664	12.8	5.5
634	1460	1487	1514	1541	1568	1596	1623	1650	12.8	5.4
635	1447	1474	1501	1528	1555	1582	1609	1636	12.7	5.4
636	1434	1461	1488	1515	1541	1568	1595	1622	12.7	5.3
637	1422	1448	1475	1502	1528	1554	1581	1608	12.7	5.3
638	1409	1435	1462	1488	1515	1541	1567	1594	12.7	5.2
639	1397	1423	1449	1475	1501	1527	1553	1580	12.7	5.2
640	1385	1410	1436	1462	1488	1514	1539	1565	12.6	5.1
641	1372	1398	1423	1449	1475	1500	1526	1551	12.6	5.1
642	1360	1385	1410	1436	1462	1487	1512	1537	12.6	5.0
643	1348	1373	1398	1423	1448	1473	1498	1523	12.6	5.0
644	1335	1360	1385	1410	1434	1459	1484	1509	12.6	4.9
645	1323	1348	1372	1397	1421	1446	1471	1496	12.6	4.9

B	Luft-Temperatur								Differenzen	
	− 5°	0°	+ 5°	+ 10°	+ 15°	+ 20°	+ 25°	+ 30°	für 1 mm bei 0°	für 1°
mm	m	m	m	m	m	m	m	m	m	m
645	1323	1348	1372	1397	1421	1446	1471	1496	12.5	4.9
646	1310	1335	1360	1384	1408	1432	1457	1482	12.5	4.9
647	1298	1322	1347	1371	1395	1419	1443	1468	12.5	4.8
648	1286	1310	1334	1358	1382	1406	1430	1454	12.5	4.8
649	1274	1297	1321	1345	1369	1393	1416	1440	12.5	4.7
650	1261	1285	1308	1332	1356	1379	1403	1426	12.4	4.7
651	1249	1272	1296	1319	1343	1366	1389	1412	12.4	4.6
652	1237	1260	1283	1306	1330	1353	1376	1399	12.4	4.6
653	1225	1248	1271	1293	1316	1339	1362	1385	12.4	4.5
654	1213	1236	1258	1281	1303	1326	1349	1371	12.4	4.5
655	1201	1223	1246	1268	1290	1312	1335	1358	12.3	4.4
656	1188	1211	1233	1255	1277	1299	1321	1344	12.3	4.4
657	1176	1199	1221	1242	1264	1286	1308	1330	12.3	4.4
658	1164	1186	1208	1230	1251	1273	1295	1316	12.3	4.3
659	1152	1174	1195	1217	1239	1260	1281	1303	12.3	4.3
660	1140	1161	1182	1204	1226	1247	1268	1289	12.3	4.2
661	1128	1149	1170	1191	1213	1234	1255	1276	12.2	4.2
662	1116	1137	1158	1179	1200	1221	1241	1262	12.2	4.1
663	1105	1125	1145	1166	1187	1207	1228	1249	12.2	4.1
664	1093	1113	1133	1153	1174	1194	1215	1235	12.2	4.0
665	1081	1101	1121	1141	1161	1181	1202	1222	12.2	4.0
666	1068	1089	1109	1128	1148	1168	1188	1209	12.1	4.0
667	1056	1076	1096	1116	1135	1155	1175	1195	12.1	3.9
668	1044	1064	1084	1103	1123	1142	1161	1181	12.1	3.9
669	1033	1052	1072	1091	1110	1129	1148	1168	12.1	3.8
670	1021	1040	1059	1079	1098	1116	1135	1154	12.1	3.8
671	1009	1028	1046	1066	1085	1104	1122	1141	12.0	3.7
672	997	1016	1034	1053	1072	1091	1109	1128	12.0	3.7
673	986	1004	1022	1040	1059	1078	1096	1114	12.0	3.7
674	974	992	1010	1028	1046	1064	1083	1101	12.0	3.6
675	962	980	998	1016	1034	1051	1069	1088	12.0	3.6
676	950	968	986	1003	1021	1039	1056	1074	12.0	3.5
677	939	956	974	991	1009	1026	1043	1061	12.0	3.5
678	927	944	962	979	996	1013	1030	1048	11.9	3.4
679	915	932	950	967	984	1001	1017	1034	11.9	3.4
680	903	920	937	954	971	988	1005	1021	11.9	3.3
681	891	908	925	942	959	975	992	1008	11.9	3.3
682	880	896	913	929	946	963	979	995	11.9	3.3
683	869	885	901	917	933	950	966	982	11.8	3.2
684	857	873	889	905	921	937	953	969	11.8	3.2
685	845	861	877	893	908	924	940	956	11.8	3.1

B	Luft-Temperatur								Differenzen	
	0°	+ 5°	+ 10°	+ 15°	+ 20°	+ 25°	+ 30°	+ 35°	für 1 mm bei 0°	für 1°
mm	m	m	m	m	m	m	m	m	m	m
685	861	877	893	908	924	940	956	972	11.8	3.1
686	849	865	880	896	911	927	943	959	11.8	3.1
687	838	853	868	883	899	914	929	945	11.8	3.0
688	826	841	856	871	886	901	916	931	11.8	3.0
689	814	829	844	859	874	888	903	918	11.7	3.0
690	802	817	832	847	861	876	890	905	11.7	2.9
691	790	805	820	834	849	863	877	892	11.7	2.9
692	779	793	807	822	836	850	865	879	11.7	2.8
693	767	781	795	809	824	838	852	866	11.7	2.8
694	756	769	783	797	811	825	839	853	11.7	2.7
695	744	757	771	785	798	812	826	840	11.6	2.7
696	732	746	759	772	786	799	813	826	11.6	2.7
697	721	734	747	760	773	786	800	813	11.6	2.6
698	709	722	735	748	761	774	787	800	11.6	2.6
699	698	711	723	736	748	761	774	787	11.6	2.5
700	686	699	711	724	736	749	761	774	11.6	2.5
701	674	687	699	712	724	736	749	761	11.5	2.5
702	663	675	687	700	712	724	736	748	11.5	2.4
703	651	663	675	687	699	711	723	735	11.5	2.4
704	640	651	663	675	687	699	711	722	11.5	2.3
705	628	640	651	663	674	686	698	709	11.5	2.3
706	617	628	640	651	662	673	685	696	11.5	2.2
707	606	617	628	639	650	661	672	683	11.4	2.2
708	594	605	616	627	638	648	659	670	11.4	2.2
709	583	594	604	615	625	636	647	657	11.4	2.1
710	572	582	593	603	613	624	634	644	11.4	2.1
711	560	570	581	591	601	611	622	632	11.4	2.0
712	548	558	569	579	589	599	609	619	11.4	2.0
713	537	547	557	567	577	587	597	606	11.3	2.0
714	526	535	545	555	564	574	584	594	11.3	1.9
715	514	524	533	543	552	561	571	581	11.3	1.9
716	503	512	522	531	540	549	558	568	11.3	1.8
717	492	501	510	519	528	537	546	555	11.3	1.8
718	481	490	498	507	516	525	534	542	11.3	1.7
719	470	478	487	495	504	512	521	529	11.2	1.7
720	459	467	475	484	492	500	509	517	11.2	1.7
721	447	456	464	472	480	488	496	504	11.2	1.6
722	435	444	452	460	468	476	484	492	11.2	1.6
723	424	432	440	448	456	464	472	479	11.2	1.5
724	413	421	428	436	444	452	459	467	11.2	1.5
725	402	409	417	424	431	439	447	454	11.2	1.5
726	391	398	405	412	419	427	434	441	11.1	1.4
727	380	387	394	401	408	415	421	428	11.1	1.4
728	369	376	382	389	396	403	409	416	11.1	1.3
729	358	364	371	377	384	391	397	404	11.1	1.3
730	347	353	360	366	372	379	385	391	11.1	1.3

B	Luft-Temperatur								Differenzen	
	0°	+5°	+10°	+15°	+20°	+25°	+30°	+35°	für 1 mm bei 0°	für 1°
mm	m	m	m	m	m	m	m	m	m	m
730	347	353	360	366	372	379	385	391	11.1	1.3
731	336	342	348	354	360	367	373	379	11.1	1.2
732	325	331	337	343	349	355	360	366	11.1	1.2
733	314	320	326	331	337	343	348	354	11.0	1.1
734	302	308	314	319	325	331	336	342	11.0	1.1
735	291	297	302	307	313	319	324	329	11.0	1.1
736	280	285	291	296	301	306	311	317	11.0	1.0
737	269	274	279	284	289	294	299	304	11.0	1.0
738	259	263	268	273	277	282	287	292	11.0	0.9
739	248	252	257	261	266	270	275	279	11.0	0.9
740	237	241	245	250	254	258	263	267	10.9	0.9
741	226	230	234	238	242	247	251	255	10.9	0.8
742	215	219	223	227	231	235	239	243	10.9	0.8
743	204	208	212	216	219	223	227	230	10.9	0.7
744	193	197	201	204	208	211	215	218	10.9	0.7
745	182	185	190	193	196	199	203	206	10.9	0.7
746	171	174	178	181	184	187	191	194	10.8	0.6
747	160	163	166	169	172	175	178	181	10.8	0.6
748	150	152	155	158	161	163	166	169	10.8	0.5
749	139	141	144	147	149	152	154	157	10.8	0.5
750	128	131	133	135	138	140	142	145	10.8	0.5
751	118	120	122	124	126	128	130	133	10.8	0.4
752	107	109	111	113	115	117	119	121	10.8	0.4
753	96	98	100	101	103	105	107	108	10.8	0.3
754	86	87	89	90	92	93	95	96	10.7	0.3
755	75	76	78	79	80	82	83	84	10.7	0.3
756	64	65	67	68	69	70	71	72	10.7	0.2
757	53	54	55	56	57	58	59	60	10.7	0.2
758	42	43	44	45	45	46	47	48	10.7	0.2
759	32	32	33	33	34	35	35	36	10.7	0.1
760	21	21	22	22	23	23	23	24	10.6	0.1
761	11	11	11	11	11	11	12	12	10.6	0
762	0	0	0	0	0	0	0	0	10.6	0
763	-11	-11	-11	-11	-11	-11	-12	-12	10.6	0
764	-21	-21	-22	-22	-23	-23	-23	-24	10.6	0.1
765	-32	-32	-33	-33	-34	-34	-35	-36	10.6	0.1
766	-42	-43	-44	-45	-45	-46	-47	-48	10.5	0.2
767	-53	-54	-55	-56	-57	-58	-59	-60	10.5	0.2
768	-63	-65	-66	-67	-68	-69	-70	-71	10.5	0.2
769	-74	-75	-77	-78	-79	-81	-82	-83	10.6	0.3
770	-84	86	-88	-89	-91	-92	-94	-95	10.6	0.3

Tafel XII.

Berechnung von Arbeitskarten nach Merkatorprojektion.

1. Formeln:

$$1 \text{ Längenminute} = N_0 \cdot \cos \varphi_0 \cdot \text{arc } 1'$$

$$1 \text{ Breitenminute} = \frac{1 \text{ Längenminute}}{\cos \varphi \cdot v^2}$$

Hierbei bedeuten:

N_0 = Querkrümmungshalbmesser des Umdrehungs-Ellipsoids für die Breite φ_0.

φ_0 = bei Berechnung der Tafel zugrunde gelegte Breite (0° bei Tafel XIIa, 30° bei Tafel XIIb, 53° 5′ bei Tafel XIIc).

φ = mittlere Breite der gesuchten Minute.

v^2 = Verhältnis des Querkrümmungshalbmessers zum Meridiankrümmungshalbmesser auf der Breite φ. (Siehe Jordans Handbuch der Vermessungskunde, Band III §§ 31 bis 39 und Anhang Seite [8] und folgende).

2. Allgemeines.

Die Merkator-Karte hat die Eigenschaft, daß der Maßstab der Karte mit der geographischen Breite wächst. Ein auf der Karte angegebener Maßstab kann daher nur für eine Breite genau gültig sein. Den folgenden Tafeln liegt die Voraussetzung zugrunde, daß der auf den Karten anzugebende Maßstab gültig ist:

für den Äquator, falls die Mittelbreite der Karte zwischen 20° S und 20° N liegt (Tafel XIIa);

für 30° Breite, falls die Mittelbreite der Karte zwischen 20° und 40° liegt (Tafel XIIb);

für 53° 5′ Breite, falls die Mittelbreite der Karte zwischen 40° und 60° liegt (Tafel XIIc).

(Die Grundbreite 53° 5′ ist für die dritte Zone gewählt worden, weil sie allgemein für die vom Reichs-Marine-Amt

herausgegebenen Karten der deutschen Küstengewässer Anwendung findet.)

Bei der Wahl dieser drei Grundbreiten kann die Abweichung des tatsächlich vorhandenen Maßstabes an den Grenzen der Karten von dem auf der Karte angegebenen für die Grundbreite gültigen Maßstab höchstens 24.7 v. H. betragen; im allgemeinen bleibt sie aber sehr viel geringer.

Die Tafeln XIIa, XIIb, XIIc geben — unter der Annahme der natürlichen Größe der Längenminute auf der Grundbreite — die Größe der Breitenminuten für jedes Minutenintervall der Breite, und zwar:

Tafel XIIa für das Intervall 0° bis 23° Breite bei der Grundbreite 0°.

Tafel XIIb für das Intervall 17° bis 43° Breite bei der Grundbreite 30°.

Tafel XIIc für das Intervall 37° bis 60° Breite bei der Grundbreite 53° 5′.

Jeder der Tafeln ist eine Hilfstafel angehängt, die für jeden Breitengrad auf einer solchen Karte die Größe eines Abstands von 1000 m auf der Erdoberfläche angibt, falls auf der Grundbreite die Längen in natürlicher Größe angenommen werden.

Beim Übertragen von Küstenlinien und dergl. aus Karten anderer Projektion*) in Merkatorkarten entsteht eine gewisse Schwierigkeit, da solche Übertragungen nicht mittels einer großen Pause ausgeführt werden dürfen.

Es müssen vielmehr beide Karten mit Quadraten von etwa Minutengröße überzogen und die Küstenumrisse quadratweise durch Pausen übertragen werden. Die so erhaltenen Küstenlinien sind in den Arbeitskarten nicht voll auszuziehen, sondern zu stricheln.

3. Berechnung einer Karte.

Es wird zunächst aus der Tafel XIIa, XIIb oder XIIc die Größe der Längen- und aller Breitenminuten entnommen und mit dem Maßstab der Karte multipliziert. Dann wird aus der zugehörigen Hilfstafel die Länge der Strecke entnommen, welche in der Mittelbreite der Karte 1000 m der Erdoberfläche darstellt.

Beispiel: Für die Fläche von 53° 41′ bis 53° 52′ N-Breite und von 7° 50′ bis 8° 10′ O-Länge soll eine Arbeitskarte im Maßstab

*) Die Meßtischblätter der Königl. preuß. Landesaufnahme sind in »konformer« Projektion konstruiert.

1 : 25 000 berechnet werden (d. h. der Maßstab in 53° 5′, der Grundbreite der Tafel, soll 1 : 25 000 betragen).

α) Längenausdehnung. Nach Tafel XIIc ist die Größe einer Längenminute für alle Karten zwischen 40° und 60° Breite = 1116.6612 m, für unsere Karte im Maßstab 1 : 25 000 also $\frac{1116.6612}{25\,000} = 11.1666 \cdot 4$ = 44.6664 mm.

Die Gesamtlängenausdehnung der Karte ist demnach

$$20 \cdot 44.6664 = \mathbf{893.320\ mm.}$$

β) Breitenausdehnung. Nach Tafel XIIc haben die einzelnen Breitenminuten zwischen 53° 41′ und 53° 52′ folgende Größen:

Von 53° 41′	bis 42′	= 1881.404 m	oder in unserer Karte	= 75.256 mm,
» 42′	» 43′	= 1882.152 »	» » » »	= 75.286 »
» 43′	» 44′	= 1882.902 »	» » » »	= 75.316 »
» 44′	» 45′	= 1883.652 »	» » » »	= 75.346 »
» 45′	» 46′	= 1884.403 »	» » » »	= 75.376 »
» 46′	» 47′	= 1885.155 »	» » » »	= 75.406 »
» 47′	» 48′	= 1885.907 »	» » » »	= 75.436 »
» 48′	» 49′	= 1886.661 »	» » » »	= 75.466 »
» 49′	» 50′	= 1887.414 »	» » » »	= 75.496 »
» 50′	» 51′	= 1888.169 »	» » » »	= 75.526 »
» 53° 51′	» 52′	= 1888.925 »	» » » »	= 75.557 »

Mithin Gesamtbreitenausdehnung = **829.467 mm.**

Zur Anfertigung der Karte genügt die Abrundung auf Zehntelmillimeter. Man erhält also:

Gesamtlängenausdehnung = 893.3 mm,
Gesamtbreitenausdehnung = 829.5 mm.

γ) Wert für 1000 m in der Karte. Aus der Hilfstafel zu Tafel XIIc ergibt sich:

In der Mittelbreite der Karte = 53° 46.5′ N erscheinen 1000 m der Erdoberfläche auf der Projektion als 1016.49 m. Oder in dem auf der Karte zu zeichnenden Maßstab sind 1000 m darzustellen durch die Strecke $\frac{1016.49}{25\,000}$ m = 40.66 mm.

Tafel XIIa.

Größen der Breitenminuten für die Breiten 0 bis 23°.

1 Längenminute = 1855.1098 m.

Der Berechnung liegt der Äquator zugrunde.

 Tafel XIIa. Größen der Breitenminuten für die Breiten 0 bis 23°.

Breite	0°	1°	2°	3°	4°	Breite
Min.	m	m	m	m	m	Min.
0— 1	1842.728	1843.018	1843.876	1845.305	1847.307	0— 1
1— 2	1842.728	1843.028	1843.895	1845.334	1847.345	1— 2
2— 3	1842.728	1843.037	1843.914	1845.362	1847.384	2— 3
3— 4	1842.729	1843.047	1843.934	1845.391	1847.422	3— 4
4— 5	1842.730	1843.057	1843.953	1845.420	1847.461	4— 5
5— 6	1842.731	1843.067	1843.973	1845.450	1847.500	5— 6
6— 7	1842.731	1843.078	1843.993	1845.479	1847.538	6— 7
7— 8	1842.733	1843.089	1844.013	1845.508	1847.577	7— 8
8— 9	1842.734	1843.099	1844.033	1845.538	1847.617	8— 9
9—10	1842.735	1843.110	1844.054	1845.568	1847.656	9—10
10—11	1842.737	1843.121	1844.074	1845.598	1847.696	10—11
11—12	1842.739	1843.132	1844.095	1845.628	1847.736	11—12
12—13	1842.741	1843.144	1844.116	1845.659	1847.776	12—13
13—14	1842.743	1843.155	1844.137	1845.689	1847.816	13—14
14—15	1842.745	1843.167	1844.158	1845.720	1847.856	14—15
15—16	1842.747	1843.178	1844.179	1845.751	1847.897	15—16
16—17	1842.749	1843.190	1844.201	1845.782	1847.938	16—17
17—18	1842.752	1843.203	1844.223	1845.813	1847.979	17—18
18—19	1842.755	1843.215	1844.245	1845.845	1848.020	18—19
19—20	1842.758	1843.227	1844.267	1845.876	1848.061	19—20
20—21	1842.761	1843.240	1844.289	1845.908	1848.102	20—21
21—22	1842.764	1843.253	1844.311	1845.940	1848.143	21—22
22—23	1842.768	1843.266	1844.334	1845.972	1848.185	22—23
23—24	1842.772	1843.279	1844.356	1846.004	1848.227	23—24
24—25	1842.776	1843.292	1844.379	1846.036	1848.268	24—25
25—26	1842.780	1843.306	1844.402	1846.069	1848.310	25—26
26—27	1842.784	1843.319	1844.425	1846.102	1848.353	26—27
27—28	1842.788	1843.333	1844.449	1846.135	1848.395	27—28
28—29	1842.793	1843.347	1844.472	1846.168	1848.438	28—29
29—30	1842.797	1843.361	1844.495	1846.201	1848.480	29—30
30—31	1842.802	1843.375	1844.519	1846.234	1848.523	30—31
31—32	1842.807	1843.389	1844.543	1846.267	1848.566	31—32
32—33	1842.812	1843.404	1844.567	1846.301	1848.609	32—33
33—34	1842.817	1843.418	1844.591	1846.335	1848.652	33—34
34—35	1842.822	1843.433	1844.615	1846.369	1848.696	34—35
35—36	1842.828	1843.449	1844.640	1846.403	1848.740	35—36
36—37	1842.833	1843.464	1844.665	1846.437	1848.784	36—37
37—38	1842.839	1843.479	1844.690	1846.472	1848.828	37—38
38—39	1842.845	1843.495	1844.715	1846.506	1848.872	38—39
39—40	1842.851	1843.510	1844.740	1846.541	1848.916	39—40
40—41	1842.857	1843.526	1844.765	1846.576	1848.961	40—41
41—42	1842.864	1843.542	1844.791	1846.611	1849.006	41—42
42—43	1842.870	1843.558	1844.816	1846.646	1849.050	42—43
43—44	1842.877	1843.574	1844.842	1846.681	1849.095	43—44
44—45	1842.884	1843.591	1844.868	1846.717	1849.140	44—45
45—46	1842.891	1843.608	1844.894	1846.752	1849.186	45—46
46—47	1842.899	1843.624	1844.920	1846.788	1849.231	46—47
47—48	1842.906	1843.641	1844.947	1846.824	1849.276	47—48
48—49	1842.914	1843.658	1844.973	1846.860	1849.322	48—49
49—50	1842.922	1843.676	1845.000	1846.897	1849.368	49—50
50—51	1842.930	1843.693	1845.027	1846.933	1849.414	50—51
51—52	1842.938	1843.711	1845.054	1846.970	1849.460	51—52
52—53	1842.946	1843.728	1845.081	1847.007	1849.507	52—53
53—54	1842.955	1843.746	1845.109	1847.044	1849.553	53—54
54—55	1842.963	1843.764	1845.136	1847.081	1849.600	54—55
55—56	1842.972	1843.783	1845.164	1847.118	1849.647	55—56
56—57	1842.981	1843.801	1845.192	1847.155	1849.694	56—57
57—58	1842.990	1843.820	1845.220	1847.193	1849.741	57—58
58—59	1842.999	1843.838	1845.248	1847.231	1849.789	58—59
59—60	1843.009	1843.857	1845.277	1847.269	1849.836	59—60

Breite	5°	6°	7°	8°	9°	Breite
Min.	m	m	m	m	m	Min.
0— 1	1849.884	1853.042	1856.785	1861.117	1866.046	0— 1
1— 2	1849.932	1853.100	1856.852	1861.194	1866.133	1— 2
2— 3	1849.980	1853.157	1856.920	1861.271	1866.221	2— 3
3— 4	1850.029	1853.215	1856.987	1861.349	1866.308	3— 4
4— 5	1850.077	1853.273	1857.055	1861.427	1866.396	4— 5
5— 6	1850.125	1853.331	1857.123	1861.505	1866.484	5— 6
6— 7	1850.174	1853.390	1857.191	1861.582	1866.572	6— 7
7— 8	1850.223	1853.448	1857.259	1861.660	1866.660	7— 8
8— 9	1850.272	1853.507	1857.328	1861.739	1866.749	8— 9
9—10	1850.322	1853.566	1857.396	1861.817	1866.837	9—10
10—11	1850.371	1853.625	1857.465	1861.896	1866.926	10—11
11—12	1850.420	1853.684	1857.534	1861.975	1867.015	11—12
12—13	1850.470	1853.744	1857.603	1862.054	1867.104	12—13
13—14	1850.520	1853.803	1857.672	1862.133	1867.193	13—14
14—15	1850.569	1853.863	1857.742	1862.213	1867.283	14—15
15—16	1850.619	1853.923	1857.812	1862.293	1867.372	15—16
16—17	1850.670	1853.982	1857.881	1862.372	1867.462	16—17
17—18	1850.720	1854.043	1857.951	1862.452	1867.552	17—18
18—19	1850.771	1854.103	1858.021	1862.532	1867.642	18—19
19—20	1850.821	1854.163	1858.092	1862.613	1867.733	19—20
20—21	1850.872	1854.224	1858.162	1862.693	1867.823	20—21
21—22	1850.923	1854.285	1858.233	1862.774	1867.914	21—22
22—23	1850.974	1854.346	1858.304	1862.854	1868.004	22—23
23—24	1851.026	1854.407	1858.375	1862.935	1868.095	23—24
24—25	1851.077	1854.468	1858.446	1863.016	1868.187	24—25
25—26	1851.129	1854.530	1858.517	1863.098	1868.278	25—26
26—27	1851.181	1854.592	1858.589	1863.179	1868.369	26—27
27—28	1851.233	1854.653	1858.661	1863.260	1868.461	27—28
28—29	1851.285	1854.716	1858.733	1863.342	1868.553	28—29
29—30	1851.338	1854.778	1858.805	1863.424	1868.645	29—30
30—31	1851.390	1854.840	1858.877	1863.506	1868.737	30—31
31—32	1851.443	1854.902	1858.949	1863.588	1868.829	31—32
32—33	1851.496	1854.965	1859.022	1863.671	1868.922	32—33
33—34	1851.549	1855.028	1859.094	1863.753	1869.014	33—34
34—35	1851.602	1855.090	1859.167	1863.836	1869.107	34—35
35—36	1851.656	1855.154	1859.240	1863.919	1869.201	35—36
36—37	1851.709	1855.217	1859.313	1864.002	1869.294	36—37
37—38	1851.762	1855.280	1859.386	1864.085	1869.387	37—38
38—39	1851.817	1855.344	1859.460	1864.169	1869.480	38—39
39—40	1851.871	1855.407	1859.533	1864.252	1869.574	39—40
40—41	1851.925	1855.471	1859.607	1864.336	1869.668	40—41
41—42	1851.979	1855.535	1859.681	1864.420	1869.762	41—42
42—43	1852.034	1855.599	1859.755	1864.504	1869.856	42—43
43—44	1852.089	1855.664	1859.829	1864.588	1869.951	43—44
44—45	1852.143	1855.729	1859.903	1864.673	1870.045	44—45
45—46	1852.198	1855.794	1859.978	1864.757	1870.140	45—46
46—47	1852.253	1855.858	1860.053	1864.842	1870.235	46—47
47—48	1852.308	1855.923	1860.127	1864.927	1870.330	47—48
48—49	1852.364	1855.989	1860.202	1865.012	1870.425	48—49
49—50	1852.419	1856.054	1860.278	1865.098	1870.520	49—50
50—51	1852.475	1856.120	1860.353	1865.183	1870.616	50—51
51—52	1852.531	1856.186	1860.429	1865.269	1870.712	51—52
52—53	1852.587	1856.252	1860.504	1865.354	1870.808	52—53
53—54	1852.643	1856.318	1860.580	1865.440	1870.904	53—54
54—55	1852.700	1856.384	1860.657	1865.526	1871.000	54—55
55—56	1852.757	1856.450	1860.733	1865.613	1871.096	55—56
56—57	1852.813	1856.517	1860.809	1865.699	1871.193	56—57
57—58	1852.870	1856.584	1860.886	1865.785	1871.290	57—58
58—59	1852.927	1856.651	1860.963	1865.872	1871.387	58—59
59—60	1852.985	1856.718	1861.040	1865.959	1871.484	59—60

 Tafel XIIa. Größen der Breitenminuten für die Breiten 0 bis 23°.

Breite	10°	11°	12°	13°	14°	Breite
Min.	m	m	m	m	m	Min.
0— 1	1871.581	1877.728	1884.498	1891.903	1899.952	0— 1
1— 2	1871.678	1877.836	1884.616	1892.032	1900.092	1— 2
2— 3	1871.776	1877.944	1884.735	1892.161	1900.232	2— 3
3— 4	1871.873	1878.052	1884.853	1892.290	1900.372	3— 4
4— 5	1871.971	1878.160	1884.972	1892.419	1900.512	4— 5
5— 6	1872.069	1878.268	1885.091	1892.549	1900.653	5— 6
6— 7	1872.168	1878.377	1885.210	1892.679	1900.793	6— 7
7— 8	1872.266	1878.486	1885.329	1892.808	1900.934	7— 8
8— 9	1872.364	1878.595	1885.449	1892.938	1901.075	8— 9
9—10	1872.463	1878.704	1885.568	1893.069	1901.217	9—10
10—11	1872.562	1878.813	1885.688	1893.199	1901.358	10—11
11—12	1872.661	1878.922	1885.808	1893.330	1901.500	11—12
12—13	1872.760	1879.032	1885.928	1893.461	1901.641	12—13
13—14	1872.860	1879.142	1886.049	1893.592	1901.783	13—14
14—15	1872.960	1879.252	1886.169	1893.723	1901.926	14—15
15—16	1873.059	1879.362	1886.290	1893.854	1902.068	15—16
16—17	1873.159	1879.472	1886.411	1893.986	1902.210	16—17
17—18	1873.260	1879.583	1886.532	1894.118	1902.353	17—18
18—19	1873.360	1879.693	1886.653	1894.250	1902.496	18—19
19—20	1873.460	1879.804	1886.774	1894.382	1902.639	19—20
20—21	1873.561	1879.915	1886.896	1894.514	1902.782	20—21
21—22	1873.662	1880.026	1887.018	1894.646	1902.925	21—22
22—23	1873.763	1880.137	1887.140	1894.779	1903.069	22—23
23—24	1873.864	1880.249	1887.262	1894.912	1903.212	23—24
24—25	1873.965	1880.361	1887.384	1895.045	1903.356	24—25
25—26	1874.067	1880.473	1887.506	1895.178	1903.500	25—26
26—27	1874.169	1880.584	1887.629	1895.311	1903.644	26—27
27—28	1874.270	1880.696	1887.752	1895.445	1903.789	27—28
28—29	1874.372	1880.809	1887.875	1895.578	1903.933	28—29
29—30	1874.475	1880.921	1887.998	1895.712	1904.078	29—30
30—31	1874.577	1881.034	1888.121	1895.846	1904.223	30—31
31—32	1874.679	1881.147	1888.244	1895.980	1904.368	31—32
32—33	1874.782	1881.260	1888.368	1896.115	1904.514	32—33
33—34	1874.885	1881.374	1888.492	1896.249	1904.659	33—34
34—35	1874.988	1881.487	1888.616	1896.384	1904.805	34—35
35—36	1875.091	1881.601	1888.740	1896.519	1904.951	35—36
36—37	1875.195	1881.715	1888.865	1896.655	1905.097	36—37
37—38	1875.298	1881.829	1888.989	1896.790	1905.244	37—38
38—39	1875.402	1881.943	1889.114	1896.925	1905.390	38—39
39—40	1875.506	1882.057	1889.239	1897.061	1905.537	39—40
40—41	1875.610	1882.172	1889.364	1897.197	1905.684	40—41
41—42	1875.714	1882.287	1889.489	1897.333	1905.831	41—42
42—43	1875.819	1882.401	1889.615	1897.469	1905.978	42—43
43—44	1875.923	1882.516	1889.730	1897.606	1906.126	43—44
44—45	1876.028	1882.632	1889.866	1897.742	1906.273	44—45
45—46	1876.133	1882.747	1889.992	1897.879	1906.421	45—46
46—47	1876.238	1882.862	1890.118	1898.016	1906.569	46—47
47—48	1876.343	1882.978	1890.244	1898.153	1906.718	47—48
48—49	1876.449	1883.094	1890.371	1898.290	1906.866	48—49
49—50	1876.554	1883.210	1890.497	1898.427	1907.014	49—50
50—51	1876.660	1883.326	1890.624	1898.565	1907.163	50—51
51—52	1876.766	1883.442	1890.751	1898.703	1907.312	51—52
52—53	1876.872	1883.559	1890.878	1898.841	1907.461	52—53
53—54	1876.979	1883.676	1891.006	1898.979	1907.610	53—54
54—55	1877.085	1883.793	1891.134	1899.117	1907.760	54—55
55—56	1877.192	1883.910	1891.261	1899.256	1907.910	55—56
56—57	1877.299	1884.027	1891.389	1899.395	1908.059	56—57
57—58	1877.406	1884.145	1891.518	1899.534	1908.209	57—58
58—59	1877.513	1884.262	1891.646	1899.673	1908.360	58—59
59—60	1877.620	1884.380	1891.774	1899.812	1908.510	59—60

Breite	15°	16°	17°	18°	19°	Breite
Min.	m	m	m	m	m	Min.
0— 1	1908.661	1918.043	1928.112	1938.887	1950.386	0— 1
1— 2	1908.812	1918.205	1928.286	1939.073	1950.584	1— 2
2— 3	1908.963	1918.367	1928.460	1939.259	1950.782	2— 3
3— 4	1909.114	1918.530	1928.634	1939.445	1950.980	3— 4
4— 5	1909.265	1918.692	1928.808	1939.631	1951.179	4— 5
5— 6	1909.417	1918.855	1928.983	1939.818	1951.377	5— 6
6— 7	1909.569	1919.018	1929.158	1940.004	1951.576	6— 7
7— 8	1909.721	1919.181	1929.333	1940.191	1951.776	7— 8
8— 9	1909.873	1919.345	1929.508	1940.378	1951.975	8— 9
9—10	1910.026	1919.508	1929.683	1940.566	1952.174	9—10
10—11	1910.178	1919.672	1929.859	1940.753	1952.374	10—11
11—12	1910.331	1919.836	1930.035	1940.941	1952.574	11—12
12—13	1910.484	1920.000	1930.211	1941.129	1952.774	12—13
13—14	1910.637	1920.165	1930.387	1941.317	1952.975	13—14
14—15	1910.790	1920.330	1930.563	1941.505	1953.175	14—15
15—16	1910.943	1920.495	1930.739	1941.694	1953.376	15—16
16—17	1911.097	1920.660	1930.916	1941.882	1953.577	16—17
17—18	1911.251	1920.825	1931.093	1942.071	1953.778	17—18
18—19	1911.405	1920.990	1931.270	1942.260	1953.980	18—19
19—20	1911.559	1921.156	1931.448	1942.450	1954.181	19—20
20—21	1911.713	1921.322	1931.625	1942.639	1954.383	20—21
21—22	1911.867	1921.488	1931.803	1942.829	1954.585	21—22
22—23	1912.022	1921.654	1931.981	1943.019	1954.787	22—23
23—24	1912.177	1921.821	1932.159	1943.209	1954.990	23—24
24—25	1912.332	1921.987	1932.337	1943.399	1955.192	24—25
25—26	1912.487	1922.154	1932.515	1943.589	1955.395	25—26
26—27	1912.643	1922.321	1932.694	1943.780	1955.598	26—27
27—28	1912.799	1922.488	1932.873	1943.971	1955.801	27—28
28—29	1912.955	1922.656	1933.052	1944.162	1956.005	28—29
29—30	1913.111	1922.823	1933.232	1944.354	1956.208	29—30
30—31	1913.267	1922.991	1933.411	1944.545	1956.412	30—31
31—32	1913.423	1923.159	1933.591	1944.737	1956.616	31—32
32—33	1913.580	1923.327	1933.770	1944.929	1956.820	32—33
33—34	1913.737	1923.496	1933.950	1945.121	1957.025	33—34
34—35	1913.894	1923.664	1934.131	1945.313	1957.230	34—35
35—36	1914.051	1923.832	1934.311	1945.506	1957.435	35—36
36—37	1914.208	1924.001	1934.492	1945.698	1957.640	36—37
37—38	1914.366	1924.171	1934.672	1945.891	1957.845	37—38
38—39	1914.524	1924.340	1934.853	1946.084	1958.051	38—39
39—40	1914.682	1924.509	1935.035	1946.278	1958.257	39—40
40—41	1914.840	1924.679	1935.216	1946.471	1958.463	40—41
41—42	1914.998	1924.849	1935.398	1946.665	1958.669	41—42
42—43	1915.157	1925.019	1935.580	1946.859	1958.876	42—43
43—44	1915.315	1925.189	1935.762	1947.053	1959.082	43—44
44—45	1915.474	1925.359	1935.944	1947.247	1959.289	44—45
45—46	1915.633	1925.530	1936.127	1947.442	1959.496	45—46
46—47	1915.792	1925.700	1936.309	1947.637	1959.704	46—47
47—48	1915.952	1925.871	1936.492	1947.832	1959.911	47—48
48—49	1916.111	1926.042	1936.675	1948.027	1960.119	48—49
49—50	1916.271	1926.214	1936.858	1948.222	1960.327	49—50
50—51	1916.431	1926.385	1937.042	1948.418	1960.535	50—51
51—52	1916.591	1926.557	1937.226	1948.614	1960.743	51—52
52—53	1916.752	1926.729	1937.409	1948.810	1960.952	52—53
53—54	1916.912	1926.901	1937.593	1949.006	1961.161	53—54
54—55	1917.073	1927.073	1937.778	1949.203	1961.370	54—55
55—56	1917.235	1927.246	1937.962	1949.399	1961.579	55—56
56—57	1917.396	1927.419	1938.147	1949.596	1961.788	56—57
57—58	1917.557	1927.592	1938.331	1949.794	1961.998	57—58
58—59	1917.719	1927.765	1938.516	1949.991	1962.208	58—59
59—60	1917.881	1927.938	1938.702	1950.188	1962.418	59—60

Breite	20°	21°	22°
Min.	m	m	m
0— 1	1962.628	1975.634	1989.428
1— 2	1962.838	1975.858	1989.665
2— 3	1963.049	1976.081	1989.902
3— 4	1963.260	1976.305	1990.139
4— 5	1963.471	1976.529	1990.376
5— 6	1963.682	1976.753	1990.613
6— 7	1963.893	1976.977	1990.851
7— 8	1964.105	1977.202	1991.089
8— 9	1964.317	1977.427	1991.327
9—10	1964.529	1977.652	1991.566
10—11	1964.742	1977.877	1991.805
11—12	1964.954	1978.103	1992.044
12—13	1965.167	1978.329	1992.283
13—14	1965.380	1978.555	1992.522
14—15	1965.593	1978.781	1992.762
15—16	1965.807	1979.007	1993.002
16—17	1966.020	1979.234	1993.242
17—18	1966.234	1979.461	1993.482
18—19	1966.448	1979.688	1993.723
19—20	1966.662	1979.915	1993.964
20—21	1966.876	1980.143	1994.205
21—22	1967.091	1980.371	1994.446
22—23	1967.306	1980.599	1994.687
23—24	1967.522	1980.827	1994.929
24—25	1967.737	1981.055	1995.171
25—26	1967.953	1981.284	1995.413
26—27	1968.169	1981.513	1995.656
27—28	1968.385	1981.742	1995.898
28—29	1968.601	1981.971	1996.141
29—30	1968.817	1982.201	1996.384
30—31	1969.034	1982.431	1996.627
31—32	1969.251	1982.661	1996.871
32—33	1969.468	1982.891	1997.115
33—34	1969.685	1983.121	1997.359
34—35	1969.902	1983.352	1997.603
35—36	1970.120	1983.583	1997.847
36—37	1970.338	1983.814	1998.092
37—38	1970.556	1984.045	1998.337
38—39	1970.775	1984.277	1998.582
39—40	1970.994	1984.509	1998.827
40—41	1971.212	1984.741	1999.073
41—42	1971.431	1984.973	1999.319
42—43	1971.650	1985.205	1999.565
43—44	1971.870	1985.438	1999.811
44—45	1972.090	1985.671	2000.058
45—46	1972.310	1985.904	2000.305
46—47	1972.530	1986.137	2000.552
47—48	1972.750	1986.371	2000.799
48—49	1972.970	1986.605	2001.046
49—50	1973.191	1986.839	2001.294
50—51	1973.412	1987.073	2001.542
51—52	1973.634	1987.307	2001.790
52—53	1973.855	1987.542	2002.039
53—54	1974.077	1987.777	2002.288
54—55	1974.299	1988.012	2002.536
55—56	1974.521	1988.247	2002.785
56—57	1974.743	1988.483	2003.034
57—58	1974.965	1988.719	2003.284
58—59	1975.188	1988.955	2003.534
59—60	1975.411	1989.191	2003.784

Hilfstafel zu Tafel XIIa.

Zur Anfertigung von Maßstäben für Karten von 0 bis 23° Breite.

Breite	1000 m der Erdoberfläche erscheinen in der Projektionsfläche als m	Δ m
0°	1000.000	
		0.152
1	1000.152	
		0.454
2	1000.606	
		0.757
3	1001.363	
		1.063
4	1002.426	
		1.368
5	1003.794	
		1.681
6	1005.475	
		1.985
7	1007.460	
		2.302
8	1009.762	
		2.620
9	1012.382	
		2.943
10	1015.325	
		3.268
11	1018.593	
		3.600
12	1022.193	
		3.938
13	1026.131	
		4.281
14	1030.412	
		4.633
15	1035.045	
		4.991
16	1040.036	
		5.363
17	1045.399	
		5.728
18	1051.127	
		6.120
19	1057.247	
		6.516
20	1063.763	
		6.922
21	1070.685	
		7.345
22	1078.030	
		7.777
23	1085.807	

Tafel XII b.

Größen der Breitenminuten für die Breiten von 17 bis 43°.

1 Längenminute = 1607.9141 m.

Der Berechnung liegt der Breitenparallel von 30° zugrunde.

Tafel XIIb. Größen der Breitenminuten für die Breiten von 17 bis 43°.

Breite	17°	18°	19°	Breite
Min.	m	m	m	Min.
0— 1	1671.189	1680.528	1690.494	0— 1
1— 2	1671.340	1680.689	1690.666	1— 2
2— 3	1671.490	1680.850	1690.838	2— 3
3— 4	1671.641	1681.011	1691.010	3— 4
4— 5	1671.792	1681.173	1691.182	4— 5
5— 6	1671.943	1681.335	1691.354	5— 6
6— 7	1672.095	1681.496	1691.526	6— 7
7— 8	1672.247	1681.658	1691.699	7— 8
8— 9	1672.398	1681.820	1691.872	8— 9
9—10	1672.550	1681.983	1692.045	9—10
10—11	1672.702	1682.145	1692.218	10—11
11—12	1672.854	1682.308	1692.391	11—12
12—13	1673.007	1682.471	1692.564	12—13
13—14	1673.160	1682.634	1692.738	13—14
14—15	1673.313	1682.797	1692.912	14—15
15—16	1673.466	1682.960	1693.086	15—16
16—17	1673.619	1683.124	1693.260	16—17
17—18	1673.772	1683.288	1693.435	17—18
18—19	1673.926	1683.452	1693.610	18—19
19—20	1674.080	1683.616	1693.784	19—20
20—21	1674.234	1683.780	1693.959	20—21
21—22	1674.388	1683.944	1694.134	21—22
22—23	1674.542	1684.108	1694.309	22—23
23—24	1674.696	1684.273	1694.484	23—24
24—25	1674.850	1684.438	1694.660	24—25
25—26	1675.005	1684.603	1694.836	25—26
26—27	1675.160	1684.768	1695.012	26—27
27—28	1675.315	1684.934	1695.188	27—28
28—29	1675.470	1685.100	1695.364	28—29
29—30	1675.625	1685.266	1695.541	29—30
30—31	1675.781	1685.432	1695.718	30—31
31—32	1675.937	1685.598	1695.895	31—32
32—33	1676.093	1685.764	1696.012	32—33
33—34	1676.249	1685.920	1696.249	33—34
34—35	1676.405	1686.087	1696.426	34—35
35—36	1676.561	1686.264	1696.604	35—36
36—37	1676.718	1686.431	1696.782	36—37
37—38	1676.875	1686.599	1696.960	37—38
38—39	1677.031	1686.767	1697.138	38—39
39—40	1677.188	1686.934	1697.316	39—40
40—41	1677.345	1687.102	1697.495	40—41
41—42	1677.503	1687.270	1697.674	41—42
42—43	1677.661	1687.438	1697.853	42—43
43—44	1677.819	1687.606	1698.032	43—44
44—45	1677.977	1687.774	1698.211	44—45
45—46	1678.135	1687.943	1698.391	45—46
46—47	1678.293	1688.112	1698.571	46—47
47—48	1678.452	1688.281	1698.751	47—48
48—49	1678.610	1688.450	1698.931	48—49
49—50	1678.769	1688.619	1699.111	49—50
50—51	1678.928	1688.789	1699.291	50—51
51—52	1679.087	1688.959	1699.471	51—52
52—53	1679.247	1689.129	1699.652	52—53
53—54	1679.407	1689.299	1699.833	53—54
54—55	1679.566	1689.469	1700.014	54—55
55—56	1679.726	1689.640	1700.196	55—56
56—57	1679.886	1689.810	1700.377	56—57
57—58	1680.046	1689.981	1700.559	57—58
58—59	1680.207	1690.152	1700.741	58—59
59—60	1680.368	1690.323	1700.923	59—60

Breite	20°	21°	22°	23°	24°	Breite
Min.	m	m	m	m	m	Min.
0— 1	1701.105	1712.378	1724.334	1736.994	1750.381	0— 1
1— 2	1701.287	1712.572	1724.539	1737.211	1750.610	1— 2
2— 3	1701.470	1712.765	1724.744	1737.428	1750.840	2— 3
3— 4	1701.653	1712.959	1724.950	1737.646	1751.070	3— 4
4— 5	1701.836	1713.154	1725.156	1737.864	1751.300	4— 5
5— 6	1702.019	1713.348	1725.362	1738.082	1751.530	5— 6
6— 7	1702.203	1713.543	1725.568	1738.300	1751.760	6— 7
7— 8	1702.386	1713.737	1725.774	1738.518	1751.991	7— 8
8— 9	1702.570	1713.932	1725.980	1738.736	1752.222	8— 9
9—10	1702.754	1713.128	1726.187	1738.955	1752.453	9—10
10—11	1702.938	1714.323	1726.394	1739.174	1752.684	10—11
11—12	1703.122	1714.519	1726.601	1739.393	1752.915	11—12
12—13	1703.307	1714.714	1726.808	1739.612	1753.147	12—13
13—14	1703.491	1714.910	1727.016	1739.832	1753.379	13—14
14—15	1703.676	1715.106	1727.224	1740.052	1753.612	14—15
15—16	1703.861	1715.302	1727.432	1740.272	1753.844	15—16
16—17	1704.046	1715.499	1727.640	1740.492	1754.077	16—17
17—18	1704.231	1715.696	1727.848	1740.712	1754.309	17—18
18—19	1704.417	1715.893	1728.056	1740.932	1754.542	18—19
19—20	1704.602	1716.090	1728.265	1741.153	1754.776	19—20
20—21	1704.788	1716.287	1728.474	1741.374	1755.009	20—21
21—22	1704.974	1716.484	1728.683	1741.595	1755.243	21—22
22—23	1705.161	1716.682	1728.892	1741.817	1755.477	22—23
23—24	1705.347	1716.879	1729.102	1742.038	1755.711	23—24
24—25	1705.534	1717.077	1729.312	1742.260	1755.945	24—25
25—26	1705.721	1717.275	1729.522	1742.482	1756.179	25—26
26—27	1705.908	1717.474	1729.732	1742.704	1756.414	26—27
27—28	1706.095	1717.672	1729.942	1742.927	1756.649	27—28
28—29	1706.283	1717.871	1730.152	1743.149	1756.884	28—29
29—30	1706.470	1718.070	1730.363	1743.372	1757.120	29—30
30—31	1706.658	1718.269	1730.574	1743.595	1757.355	30—31
31—32	1706.846	1718.468	1730.785	1743.818	1757.591	31—32
32—33	1707.034	1718.668	1730.996	1744.042	1757.827	32—33
33—34	1707.222	1718.868	1731.208	1744.265	1758.063	33—34
34—35	1707.410	1719.068	1731.420	1744.489	1758.299	34—35
35—36	1707.599	1719.268	1731.632	1744.713	1758.536	35—36
36—37	1707.788	1719.468	1731.844	1744.938	1758.773	36—37
37—38	1707.977	1719.669	1732.056	1745.162	1759.010	37—38
38—39	1708.166	1719.870	1732.268	1745.386	1759.247	38—39
39—40	1708.356	1720.071	1732.481	1745.611	1759.484	39—40
40—41	1708.545	1720.272	1732.694	1745.836	1759.722	40—41
41—42	1708.735	1720.473	1732.907	1746.061	1759.960	41—42
42—43	1708.925	1720.675	1733.120	1746.287	1760.198	42—43
43—44	1709.115	1720.876	1733.334	1746.512	1760.436	43—44
44—45	1709.305	1721.078	1733.548	1746.738	1760.675	44—45
45—46	1709.496	1721.280	1733.762	1746.964	1760.914	45—46
46—47	1709.687	1721.482	1733.976	1747.191	1761.152	46—47
47—48	1709.878	1721.685	1734.190	1747.417	1761.391	47—48
48—49	1710.069	1721.887	1734.404	1747.644	1761.631	48—49
49—50	1710.260	1722.090	1734.619	1747.871	1761.870	49—50
50—51	1710.452	1722.293	1734.834	1748.098	1762.110	50—51
51—52	1710.644	1722.496	1735.049	1748.325	1762.350	51—52
52—53	1710.836	1722.700	1735.264	1748.553	1762.590	52—53
53—54	1711.028	1722.903	1735.480	1748.781	1762.830	53—54
54—55	1711.220	1723.107	1735.696	1749.009	1763.071	54—55
55—56	1711.412	1723.311	1735.912	1749.237	1763.312	55—56
56—57	1711.605	1723.515	1736.128	1749.465	1763.553	56—57
57—58	1711.798	1723.720	1736.344	1749.694	1763.794	57—58
58—59	1711.991	1723.924	1736.560	1749.923	1764.035	58—59
59—60	1712.185	1724.129	1736.777	1750.152	1764.277	59—60

Breite	25°	26°	27°	28°	29°	Breite
Min.	m	m	m	m	m	Min.
0— 1	1764.519	1779.438	1795.163	1811.727	1829.163	0— 1
1— 2	1764.761	1779.693	1795.432	1812.010	1829.461	1— 2
2— 3	1765.004	1779.949	1795.702	1812.294	1829.760	2— 3
3— 4	1765.246	1780.205	1795.971	1812.578	1830.058	3— 4
4— 5	1765.489	1780.461	1796.241	1812.862	1830.357	4— 5
5— 6	1765.732	1780.717	1796.511	1813.146	1830.656	5— 6
6— 7	1765.975	1780.974	1796.781	1813.431	1830.956	6— 7
7— 8	1766.219	1781.230	1797.052	1813.716	1831.255	7— 8
8— 9	1766.463	1781.487	1797.323	1814.001	1831.555	8— 9
9—10	1766.707	1781.745	1797.594	1814.286	1831.856	9—10
10—11	1766.951	1782.002	1797.865	1814.572	1832.156	10—11
11—12	1767.195	1782.260	1798.136	1814.858	1832.457	11—12
12—13	1767.440	1782.517	1798.408	1815.144	1832.758	12—13
13—14	1767.684	1782.775	1798.680	1815.430	1833.059	13—14
14—15	1767.929	1783.034	1798.952	1815.717	1833.360	14—15
15—16	1768.175	1783.292	1799.224	1816.004	1833.662	15—16
16—17	1768.420	1783.551	1799.497	1816.291	1833.964	16—17
17—18	1768.666	1783.810	1799.770	1816.578	1834.267	17—18
18—19	1768.912	1784.069	1800.043	1816.865	1834.569	18—19
19—20	1769.158	1784.328	1800.317	1817.153	1834.872	19—20
20—21	1769.404	1784.588	1800.590	1817.441	1835.175	20—21
21—22	1769.651	1784.848	1800.864	1817.729	1835.478	21—22
22—23	1769.897	1785.108	1801.138	1818.018	1835.782	22—23
23—24	1770.144	1785.368	1801.412	1818.306	1836.085	23—24
24—25	1770.392	1785.629	1801.686	1818.595	1836.389	24—25
25—26	1770.639	1785.890	1801.961	1818.884	1836.694	25—26
26—27	1770.887	1786.151	1802.236	1819.174	1836.998	26—27
27—28	1771.135	1786.412	1802.511	1819.463	1837.303	27—28
28—29	1771.383	1786.673	1802.786	1819.753	1837.608	28—29
29—30	1771.631	1786.935	1803.062	1820.044	1837.914	29—30
30—31	1771.880	1787.197	1803.338	1820.334	1838.219	30—31
31—32	1772.129	1787.459	1803.614	1820.625	1838.525	31—32
32—33	1772.378	1787.722	1803.891	1820.916	1838.831	32—33
33—34	1772.627	1787.984	1804.167	1821.207	1839.137	33—34
34—35	1772.876	1788.247	1804.444	1821.498	1839.444	34—35
35—36	1773.126	1788.510	1804.721	1821.790	1839.751	35—36
36—37	1773.376	1788.774	1804.999	1822.082	1840.058	36—37
37—38	1773.626	1789.038	1805.277	1822.374	1840.365	37—38
38—39	1773.876	1789.302	1805.554	1822.666	1840.673	38—39
39—40	1774.126	1789.566	1805.833	1822.959	1840.981	39—40
40—41	1774.377	1789.830	1806.111	1823.252	1841.289	40—41
41—42	1774.628	1790.094	1806.389	1823.545	1841.597	41—42
42—43	1774.879	1790.359	1806.668	1823.839	1841.906	42—43
43—44	1775.130	1790.624	1806.947	1824.132	1842.215	43—44
44—45	1775.382	1790.889	1807.227	1824.426	1842.524	44—45
45—46	1775.634	1791.154	1807.506	1824.720	1842.834	45—46
46—47	1775.886	1791.420	1807.786	1825.015	1843.143	46—47
47—48	1776.138	1791.686	1808.066	1825.309	1843.453	47—48
48—49	1776.390	1791.952	1808.346	1825.604	1843.764	48—49
49—50	1776.643	1792.219	1808.626	1825.900	1844.074	49—50
50—51	1776.896	1792.485	1808.907	1826.195	1844.385	50—51
51—52	1777.149	1792.752	1809.188	1826.491	1844.696	51—52
52—53	1777.403	1793.019	1809.469	1826.787	1845.007	52—53
53—54	1777.656	1793.286	1809.750	1827.083	1845.319	53—54
54—55	1777.910	1793.553	1810.032	1827.379	1845.630	54—55
55—56	1778.164	1793.821	1810.314	1827.676	1845.942	55—56
56—57	1778.418	1794.089	1810.596	1827.973	1846.254	56—57
57—58	1778.673	1794.357	1810.878	1828.270	1846.567	57—58
58—59	1778.928	1794.626	1811.161	1828.567	1846.880	58—59
59—60	1779.183	1794.894	1811.444	1828.865	1847.193	59—60

Breite	30°	31°	32°	33°	34°	Breite
Min.	m	m	m	m	m	Min.
0— 1	1847.506	1866.796	1887.072	1908.382	1930.770	0— 1
1— 2	1847.820	1867.126	1887.419	1908.746	1931.153	1— 2
2— 3	1848.133	1867.456	1887.765	1909.110	1931.535	2— 3
3— 4	1848.448	1867.786	1888.113	1909.475	1931.919	3— 4
4— 5	1848.762	1868.117	1888.460	1909.840	1932.302	4— 5
5— 6	1849.077	1868.448	1888.808	1910.205	1932.686	5— 6
6— 7	1849.392	1868.779	1889.156	1910.571	1933.070	6— 7
7— 8	1849.707	1869.110	1889.504	1910.937	1933.455	7— 8
8— 9	1850.022	1869.442	1889.853	1911.303	1933.839	8— 9
9—10	1850.338	1869.774	1890.202	1911.669	1934.225	9—10
10—11	1850.654	1870.106	1890.551	1912.036	1934.610	10—11
11—12	1850.970	1870.438	1890.900	1912.403	1934.996	11—12
12—13	1851.287	1870.771	1891.250	1912.771	1935.382	12—13
13—14	1851.604	1871.104	1891.600	1913.139	1935.768	13—14
14—15	1851.921	1871.438	1891.951	1913.507	1936.155	14—15
15—16	1852.238	1871.771	1892.301	1913.875	1936.542	15—16
16—17	1852.556	1872.105	1892.652	1914.244	1936.929	16—17
17—18	1852.874	1872.439	1893.004	1914.613	1937.317	17—18
18—19	1853.192	1872.773	1893.355	1914.982	1937.705	18—19
19—20	1853.510	1873.108	1893.707	1915.352	1938.093	19—20
20—21	1853.829	1873.443	1894.059	1915.722	1938.482	20—21
21—22	1854.148	1873.778	1894.411	1916.092	1938.871	21—22
22—23	1854.467	1874.114	1894.764	1916.463	1939.260	22—23
23—24	1854.787	1874.450	1895.117	1916.833	1939.650	23—24
24—25	1855.106	1874.786	1895.470	1917.204	1940.040	24—25
25—26	1855.426	1875.122	1895.823	1917.575	1940.430	25—26
26—27	1855.746	1875.459	1896.177	1917.947	1940.821	26—27
27—28	1856.067	1875.796	1896.531	1918.319	1941.212	27—28
28—29	1856.388	1876.133	1896.885	1918.692	1941.603	28—29
29—30	1856.709	1876.470	1897.240	1919.064	1941.994	29—30
30—31	1857.030	1876.808	1897.595	1919.437	1942.386	30—31
31—32	1857.352	1877.146	1897.950	1919.810	1942.778	31—32
32—33	1857.673	1877.484	1898.306	1920.184	1943.170	32—33
33—34	1857.996	1877.823	1898.662	1920.558	1943.563	33—34
34—35	1858.318	1878.162	1899.018	1920.932	1943.956	34—35
35—36	1858.641	1878.501	1899.374	1921.307	1944.349	35—36
36—37	1858.964	1878.840	1899.731	1921.682	1944.743	36—37
37—38	1859.287	1879.180	1900.088	1922.057	1945.137	37—38
38—39	1859.610	1879.520	1900.445	1922.432	1945.531	38—39
39—40	1859.934	1879.860	1900.803	1922.808	1945.926	39—40
40—41	1860.258	1880.201	1901.161	1923.184	1946.321	40—41
41—42	1860.582	1880.542	1901.519	1923.560	1946.716	41—42
42—43	1860.907	1880.883	1901.878	1923.937	1947.112	42—43
43—44	1861.232	1881.225	1902.236	1924.314	1947.508	43—44
44—45	1861.557	1881.567	1902.595	1924.692	1947.905	44—45
45—46	1861.882	1881.909	1902.955	1925.069	1948.301	45—46
46—47	1862.208	1882.251	1903.314	1925.447	1948.698	46—47
47—48	1862.534	1882.593	1903.674	1925.825	1949.096	47—48
48—49	1862.860	1882.936	1904.035	1926.204	1949.494	48—49
49—50	1863.186	1883.280	1904.395	1926.583	1949.892	49—50
50—51	1863.513	1883.623	1904.756	1926.962	1950.290	50—51
51—52	1863.840	1883.967	1905.117	1927.341	1950.689	51—52
52—53	1864.167	1884.311	1905.479	1927.721	1951.088	52—53
53—54	1864.495	1884.655	1905.841	1928.101	1951.487	53—54
54—55	1864.823	1884.999	1906.203	1928.482	1951.886	54—55
55—56	1865.151	1885.344	1906.565	1928.862	1952.286	55—56
56—57	1865.480	1885.689	1906.928	1929.243	1952.687	56—57
57—58	1865.808	1886.034	1907.291	1929.624	1953.087	57—58
58—59	1866.137	1886.380	1907.654	1930.006	1953.488	58—59
59—60	1866.467	1886.726	1908.018	1930.388	1953.889	59—60

Breite	35°	36°	37°	38°	39°	Breite
Min.	m	m	m	m	m	Min.
0—1	1954.291	1979.000	2004.957	2032.227	2060.881	0—1
1—2	1954.693	1979.422	2005.400	2032.693	2061.371	1—2
2—3	1955.095	1979.845	2005.844	2033.160	2061.861	2—3
3—4	1955.498	1980.268	2006.288	2033.626	2062.351	3—4
4—5	1955.901	1980.691	2006.733	2034.093	2062.842	4—5
5—6	1956.304	1981.114	2007.178	2034.561	2063.333	5—6
6—7	1956.707	1981.538	2007.623	2035.029	2063.825	6—7
7—8	1957.111	1981.962	2008.069	2035.498	2064.317	7—8
8—9	1957.516	1982.387	2008.515	2035.966	2064.810	8—9
9—10	1957.920	1982.812	2008.961	2036.436	2065.303	9—10
10—11	1958.325	1983.237	2009.408	2036.905	2065.796	10—11
11—12	1958.730	1983.663	2009.855	2037.375	2066.290	11—12
12—13	1959.136	1984.089	2010.303	2037.845	2066.784	12—13
13—14	1959.542	1984.515	2010.751	2038.316	2067.279	13—14
14—15	1959.948	1984.942	2011.199	2038.787	2067.774	14—15
15—16	1960.354	1985.369	2011.648	2039.258	2068.269	15—16
16—17	1960.761	1985.796	2012.097	2039.730	2068.765	16—17
17—18	1961.168	1986.224	2012.546	2040.202	2069.261	17—18
18—19	1961.576	1986.653	2012.996	2040.675	2069.758	18—19
19—20	1961.984	1987.081	2013.446	2041.148	2070.255	19—20
20—21	1962.392	1987.510	2013.897	2041.621	2070.753	20—21
21—22	1962.801	1987.939	2014.348	2042.095	2071.251	21—22
22—23	1963.209	1988.369	2014.799	2042.569	2071.749	22—23
23—24	1963.619	1988.799	2015.251	2043.043	2072.248	23—24
24—25	1964.028	1989.229	2015.703	2043.518	2072.747	24—25
25—26	1964.438	1989.659	2016.155	2043.993	2073.247	25—26
26—27	1964.849	1990.090	2016.608	2044.469	2073.747	26—27
27—28	1965.259	1990.522	2017.061	2044.945	2074.247	27—28
28—29	1965.670	1990.954	2017.515	2045.422	2074.748	28—29
29—30	1966.081	1991.386	2017.969	2045.899	2075.249	29—30
30—31	1966.493	1991.818	2018.423	2046.376	2075.751	30—31
31—32	1966.905	1992.251	2018.878	2046.854	2076.253	31—32
32—33	1967.317	1992.684	2019.333	2047.332	2076.755	32—33
33—34	1967.730	1993.118	2019.788	2047.810	2077.258	33—34
34—35	1968.143	1993.551	2020.244	2048.289	2077.761	34—35
35—36	1968.556	1993.985	2020.700	2048.768	2078.265	35—36
36—37	1968.970	1994.420	2021.156	2049.248	2078.769	36—37
37—38	1969.384	1994.855	2021.613	2049.728	2079.274	37—38
38—39	1969.798	1995.290	2022.070	2050.209	2079.779	38—39
39—40	1970.213	1995.726	2022.528	2050.690	2080.284	39—40
40—41	1970.628	1996.162	2022.986	2051.171	2080.790	40—41
41—42	1971.043	1996.598	2023.444	2051.653	2081.296	41—42
42—43	1971.459	1997.035	2023.903	2052.135	2081.803	42—43
43—44	1971.875	1997.472	2024.363	2052.617	2082.310	43—44
44—45	1972.291	1997.909	2024.822	2053.100	2082.818	44—45
45—46	1972.708	1998.347	2025.282	2053.583	2083.326	45—46
46—47	1973.125	1998.785	2025.743	2054.067	2083.834	46—47
47—48	1973.542	1999.223	2026.204	2054.551	2084.343	47—48
48—49	1973.960	1999.662	2026.665	2055.036	2084.852	48—49
49—50	1974.378	2000.102	2027.126	2055.521	2085.362	49—50
50—51	1974.796	2000.541	2027.588	2056.006	2085.872	50—51
51—52	1975.215	2000.981	2028.050	2056.492	2086.382	51—52
52—53	1975.634	2001.421	2028.513	2056.978	2086.893	52—53
53—54	1976.054	2001.862	2028.976	2057.464	2087.405	53—54
54—55	1976.474	2002.303	2029.439	2057.951	2087.916	54—55
55—56	1976.894	2002.744	2029.903	2058.438	2088.428	55—56
56—57	1977.314	2003.186	2030.367	2058.926	2088.941	56—57
57—58	1977.735	2003.628	2030.831	2059.414	2089.454	57—58
58—59	1978.156	2004.071	2031.296	2059.903	2089.968	58—59
59—60	1978.578	2004.514	2031.761	2060.392	2090.482	59—60

Breite	40°	41°	42°	Breite
Min.	m	m	m	Min.
0— 1	2090.996	2122.654	2155.947	0— 1
1— 2	2091.511	2123.195	2156.516	1— 2
2— 3	2092.026	2123.737	2157.086	2— 3
3— 4	2092.541	2124.280	2157.656	3— 4
4— 5	2093.057	2124.823	2158.227	4— 5
5— 6	2093.574	2125.366	2158.798	5— 6
6— 7	2094.091	2125.909	2159.370	6— 7
7— 8	2094.608	2126.453	2159.942	7— 8
8— 9	2095.126	2126.997	2160.514	8— 9
9—10	2095.644	2127.542	2161.087	9—10
10—11	2096.162	2128.087	2161.661	10—11
11—12	2096.681	2128.632	2162.235	11—12
12—13	2097.201	2129.178	2162.810	12—13
13—14	2097.721	2129.725	2163.385	13—14
14—15	2098.241	2130.272	2163.960	14—15
15—16	2098.762	2130.820	2164.536	15—16
16—17	2099.283	2131.368	2165.113	16—17
17—18	2099.805	2131.917	2165.690	17—18
18—19	2100.327	2132.467	2166.267	18—19
19—20	2100.850	2133.016	2166.845	19—20
20—21	2101.373	2133.566	2167.424	20—21
21—22	2101.896	2134.116	2168.003	21—22
22—23	2102.420	2134.667	2168.582	22—23
23—24	2102.944	2135.218	2169.162	23—24
24—25	2103.469	2135.770	2169.743	24—25
25—26	2103.994	2136.322	2170.324	25—26
26—27	2104.519	2136.875	2170.905	26—27
27—28	2105.045	2137.428	2171.487	27—28
28—29	2105.572	2137.982	2172.069	28—29
29—30	2106.099	2138.536	2172.652	29—30
30—31	2106.627	2139.090	2173.236	30—31
31—32	2107.155	2139.645	2173.820	31—32
32—33	2107.683	2140.201	2174.404	32—33
33—34	2108.212	2140.757	2174.989	33—34
34—35	2108.741	2141.314	2175.574	34—35
35—36	2109.270	2141.871	2176.160	35—36
36—37	2109.800	2142.428	2176.747	36—37
37—38	2110.331	2142.986	2177.334	37—38
38—39	2110.862	2143.544	2177.922	38—39
39—40	2111.393	2144.103	2178.509	39—40
40—41	2111.925	2144.662	2179.097	40—41
41—42	2112.457	2145.222	2179.686	41—42
42—43	2112.990	2145.782	2180.276	42—43
43—44	2113.523	2146.342	2180.866	43—44
44—45	2114.056	2146.903	2181.456	44—45
45—46	2114.590	2147.465	2182.047	45—46
46—47	2115.125	2148.028	2182.639	46—47
47—48	2115.660	2148.590	2183.231	47—48
48—49	2116.195	2149.153	2183.823	48—49
49—50	2116.731	2149.716	2184.416	49—50
50—51	2117.267	2150.280	2185.009	50—51
51—52	2117.804	2150.845	2185.603	51—52
52—53	2118.341	2151.410	2186.197	52—53
53—54	2118.879	2151.975	2186.792	53—54
54—55	2119.417	2152.541	2187.387	54—55
55—56	2119.955	2153.107	2187.983	55—56
56—57	2120.494	2153.674	2188.580	56—57
57—58	2121.034	2154.242	2189.177	57—58
58—59	2121.574	2154.810	2189.774	58—59
59—60	2122.114	2155.378	2190.372	59—60

Hilfstafel zu Tafel XIIb

zur Anfertigung von Maßstäben für Karten von 17 bis 43° Breite.

Breite	1000 m der Erdoberfläche erscheinen in der Projektionsfläche als m	Δ m
17°	906.094	4.969
18	911.063	5.304
19	916.367	5.648
20	922.015	6.000
21	928.015	6.366
22	934.381	6.741
23	941.122	7.129
24	948.251	7.530
25	955.781	7.947
26	963.728	8.377
27	972.105	8.727
28	980.932	9.291
29	990.223	9.777
30	1000.000	10.283
31	1010.283	10.810
32	1021.093	11.363
33	1032.456	11.886
34	1044.342	12.552
35	1056.894	13.231
36	1070.125	13.850
37	1083.975	14.553
38	1098.528	15.294
39	1113.822	16.077
40	1129.899	16.903
41	1146.802	17.779
42	1164.581	18.707
43	1183.288	

Tafel XII c.

Größen der Breitenminuten für die Breiten von 37 bis 60°.

1 Längenminute = 1116.6612 m.

Der Berechnung liegt der Breitenparallel 53° 5′ zugrunde.

Breite	37°	38°	39°	Breite
Min.	m	m	m	Min.
0— 1	1392.399	1411.337	1431.237	0— 1
1— 2	1392.707	1411.661	1431.577	1— 2
2— 3	1393.015	1411.985	1431.917	2— 3
3— 4	1393.323	1412.309	1432.258	3— 4
4— 5	1393.632	1412.633	1432.599	4— 5
5— 6	1393.941	1412.958	1432.940	5— 6
6— 7	1394.250	1413.283	1433.281	6— 7
7— 8	1394.560	1413.608	1433.623	7— 8
8— 9	1394.870	1413.934	1433.965	8— 9
9—10	1395.180	1414.260	1434.308	9—10
10—11	1395.490	1414.586	1434.651	10—11
11—12	1395.801	1414.912	1434.994	11—12
12—13	1396.112	1415.238	1435.337	12—13
13—14	1396.423	1415.565	1435.680	13—14
14—15	1396.734	1415.892	1436.024	14—15
15—16	1397.046	1416.220	1436.368	15—16
16—17	1397.358	1416.548	1436.712	16—17
17—18	1397.670	1416.876	1437.057	17—18
18—19	1397.982	1417.204	1437.402	18—19
19—20	1398.295	1417.532	1437.747	19—20
20—21	1398.608	1417.861	1438.092	20—21
21—22	1398.921	1418.190	1438.438	21—22
22—23	1399.234	1418.519	1438.784	22—23
23—24	1399.548	1418.849	1439.130	23—24
24—25	1399.862	1419.179	1439.477	24—25
25—26	1400.176	1419.509	1439.824	25—26
26—27	1400.490	1419.839	1440.171	26—27
27—28	1400.805	1420.170	1440.519	27—28
28—29	1401.120	1420.501	1440.867	28—29
29—30	1401.435	1420.832	1441.215	29—30
30—31	1401.750	1421.163	1441.563	30—31
31—32	1402.066	1421.495	1441.912	31—32
32—33	1402.382	1421.827	1442.261	32—33
33—34	1402.699	1422.159	1442.610	33—34
34—35	1403.016	1422.492	1442.960	34—35
35—36	1403.332	1422.825	1443.310	35—36
36—37	1403.649	1423.158	1443.660	36—37
37—38	1403.966	1423.492	1444.010	37—38
38—39	1404.284	1423.826	1444.361	38—39
39—40	1404.602	1424.160	1444.712	39—40
40—41	1404.920	1424.494	1445.064	40—41
41—42	1405.238	1424.828	1445.415	41—42
42—43	1405.557	1425.163	1445.767	42—43
43—44	1405.876	1425.498	1446.119	43—44
44—45	1406.195	1425.833	1446.472	44—45
45—46	1406.514	1426.169	1446.825	45—46
46—47	1406.834	1426.505	1447.178	46—47
47—48	1407.154	1426.841	1447.531	47—48
48—49	1407.474	1427.178	1447.884	48—49
49—50	1407.794	1427.514	1448.238	49—50
50—51	1408.115	1427.851	1448.592	50—51
51—52	1408.436	1428.188	1448.947	51—52
52—53	1408.757	1428.526	1449.302	52—53
53—54	1409.079	1428.864	1449.657	53—54
54—55	1409.401	1429.202	1450.013	54—55
55—56	1409.723	1429.540	1450.368	55—56
56—57	1410.045	1429.879	1450.724	56—57
57—58	1410.368	1430.218	1451.080	57—58
58—59	1410.691	1430.557	1451.437	58—59
59—60	1411.014	1430.897	1451.794	59—60

Breite	40°	41°	42°	43°	44°	Breite
Min.	m	m	m	m	m	Min.
0— 1	1452.151	1474.137	1497.258	1521.581	1547.182	0— 1
1— 2	1452.509	1474.513	1497.653	1521.997	1547.620	1— 2
2— 3	1452.866	1474.889	1498.049	1522.414	1548.058	2— 3
3— 4	1453.224	1475.266	1498.445	1522.831	1548.497	3— 4
4— 5	1453.583	1475.643	1498.841	1523.248	1548.936	4— 5
5— 6	1453.942	1476.020	1499.238	1523.665	1549.376	5— 6
6— 7	1454.300	1476.397	1499.635	1524.083	1549.815	6— 7
7— 8	1454.659	1476.775	1500.032	1524.501	1550.256	7— 8
8— 9	1455.019	1477.153	1500.430	1524.920	1550.696	8— 9
9—10	1455.379	1477.531	1500.828	1525.339	1551.137	9—10
10—11	1455.739	1477.910	1501.226	1525.758	1551.578	10—11
11—12	1456.099	1478.289	1501.625	1526.178	1552.020	11—12
12—13	1456.460	1478.668	1502.024	1526.597	1552.462	12—13
13—14	1456.821	1479.048	1502.423	1527.017	1552.905	13—14
14—15	1457.183	1479.428	1502.823	1527.438	1553.348	14—15
15—16	1457.545	1479.808	1503.223	1527.859	1553.791	15—16
16—17	1457.907	1480.189	1503.624	1528.280	1554.235	16—17
17—18	1458.269	1480.570	1504.025	1528.702	1554.678	17—18
18—19	1458.632	1480.951	1504.426	1529.124	1555.123	18—19
19—20	1458.995	1481.333	1504.827	1529.546	1555.568	19—20
20—21	1459.358	1481.715	1505.229	1529.969	1556.013	20—21
21—22	1459.721	1482.097	1505.631	1530.392	1556.458	21—22
22—23	1460.085	1482.479	1506.033	1530.816	1556.904	22—23
23—24	1460.449	1482.862	1506.436	1531.240	1557.350	23—24
24—25	1460.813	1483.246	1506.839	1531.664	1557.797	24—25
25—26	1461.178	1483.629	1507.243	1532.089	1558.244	25—26
26—27	1461.543	1484.013	1507.646	1532.514	1558.692	26—27
27—28	1461.908	1484.397	1508.050	1532.939	1559.140	27—28
28—29	1462.274	1484.782	1508.455	1533.365	1559.588	28—29
29—30	1462.640	1485.167	1508.860	1533.791	1560.037	29—30
30—31	1463.006	1485.552	1509.265	1534.217	1560.486	30—31
31—32	1463.373	1485.937	1509.670	1534.644	1560.935	31—32
32—33	1463.740	1486.323	1510.076	1535.071	1561.385	32—33
33—34	1464.107	1486.709	1510.482	1535.499	1561.835	33—34
34—35	1464.474	1487.095	1510.889	1535.927	1562.286	34—35
35—36	1464.842	1487.482	1511.296	1536.355	1562.737	35—36
36—37	1465.210	1487.869	1511.703	1536.783	1563.188	36—37
37—38	1465.579	1488.257	1512.111	1537.212	1563.640	37—38
38—39	1465.948	1488.645	1512.519	1537.641	1564.092	38—39
39—40	1466.317	1489.033	1512.927	1538.071	1564.545	39—40
40—41	1466.686	1489.421	1513.336	1538.502	1564.998	40—41
41—42	1467.056	1489.810	1513.745	1538.932	1565.451	41—42
42—43	1467.425	1490.199	1514.154	1539.363	1565.905	42—43
43—44	1467.795	1490.588	1514.564	1539.794	1566.359	43—44
44—45	1468.166	1490.978	1514.974	1540.226	1566.814	44—45
45—46	1468.537	1491.368	1515.385	1540.658	1567.269	45—46
46—47	1468.908	1491.758	1515.795	1541.090	1567.724	46—47
47—48	1469.279	1492.149	1516.206	1541.523	1568.180	47—48
48—49	1469.651	1492.540	1516.617	1541.956	1568.636	48—49
49—50	1470.024	1492.931	1517.029	1542.390	1569.092	49—50
50—51	1470.396	1493.323	1517.441	1542.823	1569.549	50—51
51—52	1470.769	1493.715	1517.854	1543.257	1570.006	51—52
52—53	1471.142	1494.107	1518.266	1543.692	1570.464	52—53
53—54	1471.515	1494.500	1518.679	1544.127	1570.922	53—54
54—55	1471.889	1494.893	1519.093	1544.562	1571.381	54—55
55—56	1472.263	1495.286	1519.507	1544.998	1571.840	55—56
56—57	1472.637	1495.680	1519.921	1545.434	1572.299	56—57
57—58	1473.012	1496.074	1520.335	1545.870	1572.759	57—58
58—59	1473.386	1496.468	1520.750	1546.307	1573.219	58—59
59—60	1473.761	1496.863	1521.166	1546.744	1573.679	59—60

Breite	45°	46°	47°	48°	49°	Breite
Min.	m	m	m	m	m	Min.
0—1	1574.140	1602.545	1632.492	1664.089	1697.452	0—1
1—2	1574.601	1603.031	1633.005	1664.630	1698.024	1—2
2—3	1575.063	1603.517	1633.518	1665.172	1698.596	2—3
3—4	1575.525	1604.005	1634.032	1665.714	1699.168	3—4
4—5	1575.988	1604.492	1634.546	1666.257	1699.741	4—5
5—6	1576.450	1604.980	1635.061	1666.800	1700.315	5—6
6—7	1576.913	1605.468	1635.576	1667.344	1700.890	6—7
7—8	1577.377	1605.957	1636.091	1667.888	1701.465	7—8
8—9	1577.842	1606.447	1636.607	1668.433	1702.040	8—9
9—10	1578.306	1606.936	1637.124	1668.978	1702.616	9—10
10—11	1578.771	1607.426	1637.641	1669.524	1703.193	10—11
11—12	1579.237	1607.917	1638.158	1670.070	1703.770	11—12
12—13	1579.703	1608.407	1638.676	1670.617	1704.347	12—13
13—14	1580.169	1608.898	1639.194	1671.164	1704.925	13—14
14—15	1580.635	1609.390	1639.713	1671.712	1705.504	14—15
15—16	1581.102	1609.883	1640.232	1672.260	1706.083	15—16
16—17	1581.569	1610.376	1640.752	1672.808	1706.662	16—17
17—18	1582.037	1610.869	1641.272	1673.357	1707.243	17—18
18—19	1582.505	1611.362	1641.793	1673.907	1707.823	18—19
19—20	1582.974	1611.856	1642.314	1674.457	1708.405	19—20
20—21	1583.443	1612.351	1642.836	1675.008	1708.987	20—21
21—22	1583.912	1612.845	1643.358	1675.559	1709.569	21—22
22—23	1584.382	1613.341	1643.880	1676.110	1710.152	22—23
23—24	1584.852	1613.837	1644.403	1676.662	1710.736	23—24
24—25	1585.323	1614.333	1644.927	1677.215	1711.320	24—25
25—26	1585.794	1614.829	1645.451	1677.768	1711.904	25—26
26—27	1586.266	1615.326	1645.975	1678.322	1712.489	26—27
27—28	1586.738	1615.824	1646.500	1678.876	1713.075	27—28
28—29	1587.210	1616.322	1647.025	1679.431	1713.661	28—29
29—30	1587.683	1616.820	1647.551	1679.986	1714.247	29—30
30—31	1588.156	1617.319	1648.077	1680.542	1714.835	30—31
31—32	1588.629	1617.819	1648.604	1681.098	1715.423	31—32
32—33	1589.103	1618.318	1649.132	1681.655	1716.011	32—33
33—34	1589.577	1618.818	1649.659	1682.212	1716.600	33—34
34—35	1590.052	1619.319	1650.187	1682.770	1717.189	34—35
35—36	1590.527	1619.820	1650.716	1683.328	1717.779	35—36
36—37	1591.003	1620.322	1651.245	1683.887	1718.370	36—37
37—38	1591.479	1620.823	1651.774	1684.446	1718.961	37—38
38—39	1591.956	1621.325	1652.304	1685.006	1719.553	38—39
39—40	1592.433	1621.828	1652.835	1685.566	1720.145	39—40
40—41	1592.910	1622.332	1653.366	1686.127	1720.737	40—41
41—42	1593.387	1622.835	1653.898	1686.688	1721.330	41—42
42—43	1593.865	1623.339	1654.430	1687.250	1721.924	42—43
43—44	1594.344	1623.844	1654.962	1687.812	1722.519	43—44
44—45	1594.823	1624.350	1655.495	1688.375	1723.114	44—45
45—46	1595.303	1624.855	1656.029	1688.939	1723.710	45—46
46—47	1595.783	1625.361	1656.563	1689.503	1724.306	46—47
47—48	1596.264	1625.867	1657.097	1690.067	1724.902	47—48
48—49	1596.744	1626.374	1657.632	1690.632	1725.499	48—49
49—50	1597.225	1626.881	1658.168	1691.197	1726.097	49—50
50—51	1597.706	1627.389	1658.704	1691.763	1726.695	50—51
51—52	1598.188	1627.898	1659.240	1692.330	1727.294	51—52
52—53	1598.670	1628.406	1659.777	1692.897	1727.893	52—53
53—54	1599.153	1628.915	1660.314	1693.464	1728.493	53—54
54—55	1599.636	1629.425	1660.852	1694.032	1729.094	54—55
55—56	1600.120	1629.935	1661.390	1694.601	1729.695	55—56
56—57	1600.604	1630.445	1661.929	1695.170	1730.297	56—57
57—58	1601.088	1630.956	1662.468	1695.740	1730.899	57—58
58—59	1601.573	1631.467	1663.008	1696.310	1731.502	58—59
59—60	1602.059	1631.979	1663.548	1696.880	1732.105	59—60

Breite	50°	51°	52°	53°	54°	Breite
Min.	m	m	m	m	m	Min.
0— 1	1732.709	1770.002	1809.489	1851.343	1895.759	0— 1
1— 2	1733.313	1770.642	1810.167	1852.062	1896.522	1— 2
2— 3	1733.918	1771.282	1810.845	1852.782	1897.286	2— 3
3— 4	1734.524	1771.923	1811.524	1853.502	1898.050	3— 4
4— 5	1735.130	1772.565	1812.204	1854.222	1898.816	4— 5
5— 6	1735.737	1773.207	1812.884	1854.944	1899.582	5— 6
6— 7	1736.344	1773.850	1813.565	1855.666	1900.349	6— 7
7— 8	1736.952	1774.493	1814.247	1856.389	1901.117	7— 8
8— 9	1737.560	1775.137	1814.929	1857.113	1901.885	8— 9
9—10	1738.169	1775.781	1815.612	1857.837	1902.655	9—10
10—11	1738.779	1776.426	1816.295	1858.563	1903.425	10—11
11—12	1739.389	1777.072	1816.980	1859.288	1904.196	11—12
12—13	1740.000	1777.719	1817.665	1860.015	1904.968	12—13
13—14	1740.611	1778.366	1818.351	1860.742	1905.740	13—14
14—15	1741.223	1779.014	1819.037	1861.471	1906.513	14—15
15—16	1741.835	1779.662	1819.724	1862.199	1907.287	15—16
16—17	1742.448	1780.311	1820.411	1862.929	1908.062	16—17
17—18	1743.062	1780.961	1821.099	1863.659	1908.838	17—18
18—19	1743.676	1781.611	1821.788	1864.390	1909.614	18—19
19—20	1744.291	1782.262	1822.478	1865.121	1910.391	19—20
20—21	1744.906	1782.913	1823.168	1865.854	1911.169	20—21
21—22	1745.522	1783.565	1823.859	1866.587	1911.948	21—22
22—23	1746.139	1784.218	1824.551	1867.321	1912.727	22—23
23—24	1746.756	1784.871	1825.243	1868.056	1913.508	23—24
24—25	1747.374	1785.525	1825.936	1868.791	1914.289	24—25
25—26	1747.992	1786.179	1826.630	1869.527	1915.071	25—26
26—27	1748.611	1786.834	1827.325	1870.264	1915.854	26—27
27—28	1749.230	1787.490	1828.020	1871.001	1916.638	27—28
28—29	1749.850	1788.146	1828.715	1871.740	1917.422	28—29
29—30	1750.471	1788.803	1829.412	1872.479	1918.208	29—30
30—31	1751.092	1789.461	1830.109	1873.219	1918.993	30—31
31—32	1751.714	1790.120	1830.806	1873.959	1919.780	31—32
32—33	1752.336	1790.779	1831.505	1874.700	1920.568	32—33
33—34	1752.959	1791.438	1832.204	1875.442	1921.356	33—34
34—35	1753.582	1792.098	1832.904	1876.184	1922.145	34—35
35—36	1754.206	1792.759	1833.605	1876.928	1922.935	35—36
36—37	1754.831	1793.421	1834.306	1877.672	1923.726	36—37
37—38	1755.456	1794.083	1835.008	1878.417	1924.518	37—38
38—39	1756.082	1794.746	1835.711	1879.163	1925.310	38—39
39—40	1756.709	1795.409	1836.414	1879.909	1926.103	39—40
40—41	1757.336	1796.073	1837.118	1880.656	1926.897	40—41
41—42	1757.963	1796.738	1837.822	1881.404	1927.692	41—42
42—43	1758.591	1797.403	1838.527	1882.152	1928.488	42—43
43—44	1759.220	1798.069	1839.233	1882.902	1929.284	43—44
44—45	1759.850	1798.736	1839.940	1883.652	1930.082	44—45
45—46	1760.480	1799.403	1840.648	1884.403	1930.880	45—46
46—47	1761.110	1800.071	1841.356	1885.155	1931.679	46—47
47—48	1761.741	1800.739	1842.065	1885.907	1932.479	47—48
48—49	1762.373	1801.408	1842.774	1886.661	1933.279	48—49
49—50	1763.006	1802.078	1843.485	1887.414	1934.080	49—50
50—51	1763.639	1802.749	1844.196	1888.169	1934.883	50—51
51—52	1764.273	1803.420	1844.907	1888.925	1935.686	51—52
52—53	1764.907	1804.092	1845.619	1889.681	1936.490	52—53
53—54	1765.542	1804.764	1846.332	1890.438	1937.294	53—54
54—55	1766.177	1805.437	1847.046	1891.196	1938.100	54—55
55—56	1766.813	1806.111	1847.761	1891.954	1938.906	55—56
56—57	1767.450	1806.785	1848.476	1892.714	1939.713	56—57
57—58	1768.087	1807.460	1849.192	1893.473	1940.522	57—58
58—59	1768.725	1808.136	1849.908	1894.234	1941.330	58—59
59—60	1769.363	1808.812	1850.625	1894.997	1942.140	59—60

Breite	55°	56°	57°	58°	59°	Breite
Min.	m	m	m	m	m	Min.
0— 1	1942.951	1993.161	2046.659	2103.752	2164.782	0— 1
1— 2	1943.762	1994.025	2047.580	2104.736	2165.835	1— 2
2— 3	1944.574	1994.890	2048.502	2105.721	2166.889	2— 3
3— 4	1945.387	1995.755	2049.426	2106.707	2167.944	3— 4
4— 5	1946.201	1996.622	2050.350	2107.694	2169.000	4— 5
5— 6	1947.016	1997.489	2051.275	2108.683	2170.058	5— 6
6— 7	1947.831	1998.358	2052.201	2109.672	2171.117	6— 7
7— 8	1948.648	1999.228	2053.128	2110.662	2172.177	7— 8
8— 9	1949.465	2000.098	2054.057	2111.654	2173.238	8— 9
9—10	1950.283	2000.969	2054.986	2112.646	2174.300	9—10
10—11	1951.103	2001.841	2055.916	2113.640	2175.364	10—11
11—12	1951.922	2002.714	2056.847	2114.635	2176.429	11—12
12—13	1952.743	2003.588	2057.780	2115.631	2177.495	12—13
13—14	1953.565	2004.463	2058.713	2116.628	2178.562	13—14
14—15	1954.387	2005.339	2059.647	2117.626	2179.630	14—15
15—16	1955.210	2006.216	2060.583	2118.626	2180.700	15—16
16—17	1956.034	2007.094	2061.519	2119.626	2181.771	16—17
17—18	1956.859	2007.972	2062.457	2120.628	2182.843	17—18
18—19	1957.686	2008.852	2063.395	2121.630	2183.917	18—19
19—20	1958.512	2009.733	2064.334	2122.634	2184.991	19—20
20—21	1959.340	2010.614	2065.275	2123.639	2186.067	20—21
21—22	1960.168	2011.496	2066.216	2124.645	2187.144	21—22
22—23	1960.997	2012.380	2067.159	2125.652	2188.222	22—23
23—24	1961.827	2013.264	2068.102	2126.661	2189.302	23—24
24—25	1962.658	2014.150	2069.047	2127.670	2190.383	24—25
25—26	1963.490	2015.036	2069.993	2128.681	2191.465	25—26
26—27	1964.322	2015.923	2070.939	2129.693	2192.548	26—27
27—28	1965.156	2016.811	2071.887	2130.705	2193.633	27—28
28—29	1965.990	2017.700	2072.836	2131.719	2194.719	28—29
29—30	1966.826	2018.590	2073.785	2132.735	2195.806	29—30
30—31	1967.662	2019.481	2074.736	2133.751	2196.894	30—31
31—32	1968.499	2020.373	2075.688	2134.769	2197.984	31—32
32—33	1969.337	2021.266	2076.641	2135.787	2199.074	32—33
33—34	1970.176	2022.159	2077.595	2136.807	2200.166	33—34
34—35	1971.016	2023.054	2078.550	2137.828	2201.260	34—35
35—36	1971.856	2023.950	2079.506	2138.850	2202.355	35—36
36—37	1972.698	2024.847	2080.463	2139.873	2203.451	36—37
37—38	1973.540	2025.744	2081.421	2140.898	2204.548	37—38
38—39	1974.383	2026.643	2082.380	2141.923	2205.646	38—39
39—40	1975.227	2027.542	2083.341	2142.950	2206.746	39—40
40—41	1976.072	2028.443	2084.302	2143.978	2207.847	40—41
41—42	1976.918	2029.345	2085.264	2145.007	2208.949	41—42
42—43	1977.765	2030.247	2086.228	2146.037	2210.053	42—43
43—44	1978.613	2031.150	2087.192	2147.069	2211.158	43—44
44—45	1979.461	2032.055	2088.158	2148.101	2212.264	44—45
45—46	1980.310	2032.961	2089.124	2149.135	2213.372	45—46
46—47	1981.161	2033.867	2090.092	2150.170	2214.481	46—47
47—48	1982.012	2034.774	2091.061	2151.206	2215.591	47—48
48—49	1982.864	2035.682	2092.030	2152.243	2216.702	48—49
49—50	1983.717	2036.592	2093.001	2153.281	2217.815	49—50
50—51	1984.571	2037.502	2093.973	2154.321	2218.929	50—51
51—52	1985.426	2038.413	2094.946	2155.362	2220.044	51—52
52—53	1986.282	2039.325	2095.920	2156.404	2221.161	52—53
53—54	1987.139	2040.239	2096.895	2157.447	2222.279	53—54
54—55	1987.996	2041.153	2097.871	2158.491	2223.398	54—55
55—56	1988.855	2042.068	2098.849	2159.536	2224.518	55—56
56—57	1989.714	2042.984	2099.827	2160.583	2225.640	56—57
57—58	1990.574	2043.901	2100.807	2161.631	2226.764	57—58
58—59	1991.435	2044.820	2101.788	2162.680	2227.888	58—59
59—60	1992.298	2045.739	2102.770	2163.731	2229.014	59—60

Hilfstafel zu Tafel XIIc

zur Anfertigung von Maßstäben für Karten von 37 bis 60° Breite.

Breite	1000 m der Erdoberfläche erscheinen in der Projektionsfläche als m	Δ m
37°	752.797	
		10.107
38	762.904	
		10.621
39	773.525	
		11.165
40	784.690	
		11.739
41	796.429	
		12.347
42	808.776	
		12.992
43	821.768	
		13.676
44	835.444	
		14.404
45	849.848	
		15.177
46	865.025	
		16.008
47	881.033	
		16.890
48	897.923	
		17.837
49	915.760	
		18.854
50	934.614	
		19.945
51	954.559	
		21.122
52	975.681	
		22.392
53	998.073	
		23.767
54	1021.840	
		25.254
55	1047.094	
		26.875
56	1073.969	
		28.639
57	1102.608	
		30.568
58	1133.176	
		32.680
59	1165.856	
		35.004
60	1200.860	

Tafel XIII.

Konstruktion eines Punktes nach der Sehnenmethode.

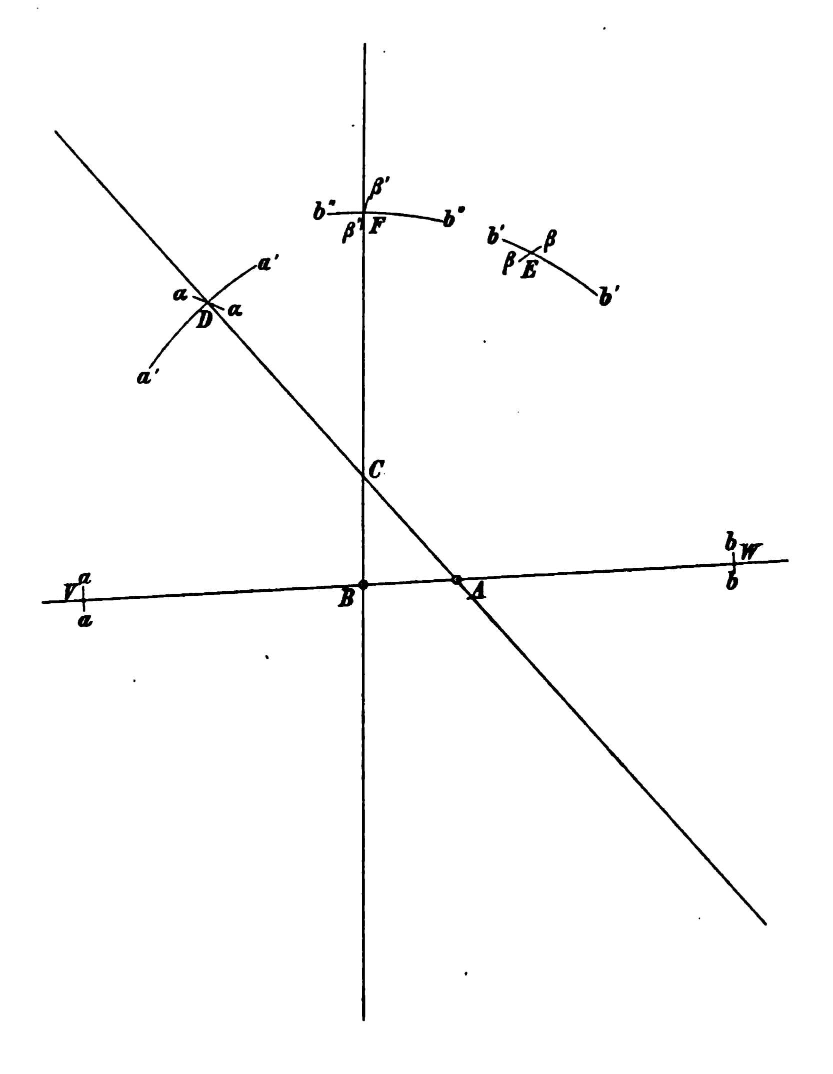
Beispiel. (Siehe die Figur.)

Gegeben: die Punkte *A* und *B*.

$\measuredangle A = 51° \ 12.2'$

$\measuredangle B = 86° \ 30.5'$.

Gesucht: Punkt *C*.



Verbinde A und B durch eine Gerade, die nach beiden Seiten über diese Punkte hinaus soweit verlängert wird, daß die Konstruktionskreise sie noch schneiden. Schlage um den Punkt A mit dem Halbmesser 50 cm*) zwei Teile eines Kreisbogens,**) nämlich $\alpha\,\alpha$ und $\alpha'\,\alpha'$. Den Schnittpunkt V von $\alpha\,\alpha$ mit $A\,B$ bezeichne durch einen Stich mit der Zeichennadel, wobei eine Lupe zu benutzen ist. Hierauf entnimm der Tafel XIII die Länge der dem $\measuredangle A$ zugehörigen Sehne. Man findet: für 51° 12.2′ die Zahl 8.642.

Da diese Zahl sich auf den Radius von der Länge 10 bezieht, der Konstruktionskreis aber den Radius 50 hat, so ist die gefundene Zahl in diesem Falle noch mit $\frac{50}{10}$ zu multiplizieren. Man erhält also die Sehnenlänge $= 8.642 \cdot 5 = 43{,}21$ cm.

Diese Strecke nimmt man in den Zirkel und schlägt damit um den Punkt V den Bogen $\alpha\,\alpha$, der $\alpha'\,\alpha'$ in D schneidet, welcher Punkt wieder durch einen Stich mit der Zeichennadel bezeichnet wird. Die Gerade $A\,D$ ist der gesuchte Schenkel des Winkels A. Man zieht diese Gerade auch über A hinaus aus.

In entsprechender Weise wäre der zweite Schenkel des $\measuredangle B$ zu konstruieren, doch ist dieser Winkel größer als 60°; daher tritt folgende Abänderung ein: Von dem Kreise um den Punkt B (dessen Radius übrigens durchaus nicht der gleiche zu sein braucht wie der des um A geschlagenen Kreises), sind drei kleine Bogen auszuziehen, nämlich die Stücke $b\,b$, $b'\,b'$ und $b''\,b''$. Sodann wird zunächst von W. aus die Sehnenlänge für einen Winkel von 60° abgetragen, d. i. der Radius des Kreises, also $W\,E = B\,W$. Dann ist die zu dem Winkel 86° 30.5′ — 60° = 26° 30.5′ gehörige Sehne zu ermitteln. Man findet $4.585 \cdot 5 = 22.93$ cm. Mit dieser Strecke wird um den Punkt E der Bogen $\beta'\,\beta'$ geschlagen. Man erhält den Schnittpunkt F zwischen $b''\,b''$ und $\beta'\,\beta'$ und die Gerade $B\,F$ als zweiten Schenkel des $\measuredangle B$. Der Schnittpunkt der Geraden $A\,D$ und $B\,F$ ist der gesuchte Punkt C.

*) Die Größe des anzuwendenden Halbmessers richtet sich nach der Lage des gesuchten Punktes C. Es muß unbedingt gefordert werden, daß die Radien der Konstruktionskreise stets die durch Konstruktion zu findenden Seiten (BC oder AC) an Länge übertreffen. Je größer man die Radien der Konstruktionskreise wählt, desto genauer wird auch die Konstruktion. Es ist dabei auch zu berücksichtigen, daß auf den Seiten des zu konstruierenden Dreiecks sich wieder neue Dreiecke aufbauen sollen, deren Grundlinien immer wieder über ihre eigentlichen Endpunkte hinaus verlängert sein müssen. Das Interesse der Genauigkeit fordert, daß man diese Geraden gleich in der gesamten Länge konstruiert, in der sie nachher gebraucht werden.

**) Man benutzt hierzu zweckmäßig den Stangenzirkel und zwar mit zwei Stahlspitzen, weil mit dem eingesetzten Bleistift die Strecken nicht mit der nötigen Genauigkeit abgegriffen werden können. Beim Ziehen der Kreisbogen ist der Zirkel gegen das Papier geneigt zu halten, da sonst das Papier durch die Spitze geritzt werden würde. — Es ist selbstverständlich, daß beim Abgreifen von Strecken mit dem Zirkel die allergrößte Sorgfalt und Genauigkeit erfordert wird.

Tafel XIII. Sehnenlängen

Radius 10.

′	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°
0	0.000	0.175	0.349	0.524	0.698	0.872	1.047	1.221	1.395	1.569
5	0.015	0.189	0.364	0.538	0.713	0.887	1.061	1.235	1.410	1.584
10	0.029	0.204	0.378	0.553	0.727	0.901	1.076	1.250	1.424	1.598
15	0.044	0.218	0.393	0.567	0.742	0.916	1.090	1.265	1.439	1.613
20	0.058	0.233	0.407	0.582	0.756	0.930	1.105	1.279	1.453	1.627
25	0.073	0.247	0.422	0.596	0.771	0.945	1.119	1.294	1.468	1.642
30	0.087	0.262	0.436	0.611	0.785	0.960	1.134	1.308	1.482	1.656
35	0.102	0.276	0.451	0.625	0.800	0.974	1.148	1.323	1.497	1.671
40	0.116	0.291	0.465	0.640	0.814	0.989	1.163	1.337	1.511	1.685
45	0.131	0.305	0.480	0.654	0.829	1.003	1.177	1.352	1.526	1.700
50	0.145	0.320	0.494	0.669	0.843	1.018	1.192	1.366	1.540	1.714
55	0.160	0.334	0.509	0.683	0.858	1.032	1.206	1.381	1.555	1.729
60	0.175	0.349	0.524	0.698	0.872	1.047	1.221	1.395	1.569	1.743
′	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
0	1.743	1.917	2.091	2.264	2.437	2.611	2.783	2.956	3.129	3.301
5	1.758	1.931	2.105	2.279	2.452	2.625	2.798	2.971	3.143	3.315
10	1.772	1.946	2.120	2.293	2.466	2.639	2.812	2.985	3.157	3.330
15	1.787	1.960	2.134	2.307	2.481	2.654	2.827	2.999	3.172	3.344
20	1.801	1.975	2.148	2.322	2.495	2.668	2.841	3.014	3.186	3.358
25	1.816	1.989	2.163	2.336	2.510	2.683	2.855	3.028	3.200	3.373
30	1.830	2.004	2.177	2.351	2.524	2.697	2.870	3.042	3.215	3.387
35	1.845	2.018	2.192	2.365	2.538	2.711	2.884	3.057	3.229	3.401
40	1.859	2.033	2.206	2.380	2.553	2.726	2.899	3.071	3.244	3.416
45	1.873	2.047	2.221	2.394	2.567	2.740	2.913	3.086	3.258	3.430
50	1.888	2.062	2.235	2.409	2.582	2.755	2.927	3.100	3.272	3.444
55	1.902	2.076	2.250	2.423	2.596	2.769	2.942	3.114	3.287	3.459
60	1.917	2.091	2.264	2.437	2.611	2.783	2.956	3.129	3.301	3.473
′	20°	21°	22°	23°	24°	25°	26°	27°	28°	29°
0	3.473	3.645	3.816	3.987	4.158	4.329	4.499	4.669	4.838	5.008
5	3.487	3.659	3.830	4.002	4.172	4.343	4.513	4.683	4.853	5.022
10	3.502	3.673	3.845	4.016	4.187	4.357	4.527	4.697	4.867	5.036
15	3.516	3.688	3.859	4.030	4.201	4.371	4.542	4.711	4.881	5.050
20	3.530	3.702	3.873	4.044	4.215	4.386	4.556	4.725	4.895	5.064
25	3.545	3.716	3.888	4.059	4.229	4.400	4.570	4.740	4.909	5.078
30	3.559	3.730	3.902	4.073	4.244	4.414	4.584	4.754	4.923	5.092
35	3.573	3.745	3.916	4.087	4.258	4.428	4.598	4.768	4.937	5.106
40	3.587	3.759	3.930	4.101	4.272	4.442	4.612	4.782	4.951	5.120
45	3.602	3.773	3.945	4.116	4.286	4.456	4.626	4.796	4.965	5.134
50	3.616	3.788	3.959	4.130	4.300	4.471	4.641	4.810	4.979	5.148
55	3.630	3.802	3.973	4.144	4.315	4.485	4.655	4.824	4.994	5.162
60	3.645	3.816	3.987	4.158	4.329	4.499	4.669	4.838	5.008	5.176

Proportional-Teile.

	15
1′	3.0
2′	6.0
3′	9.0
4′	12.0
5′	15.0

	14
1′	2.8
2′	5.6
3′	8.4
4′	11.2
5′	14.0

für Winkel von 0° bis 60°.

Radius 10.

′	30°	31°	32°	33°	34°	35°	36°	37°	38°	39°
0	5.176	5.345	5.513	5.680	5.847	6.014	6.180	6.346	6.511	6.676
5	5.190	5.359	5.527	5.694	5.861	6.028	6.194	6.360	6.525	6.690
10	5.204	5.373	5.541	5.708	5.875	6.042	6.208	6.374	6.539	6.704
15	5.219	5.387	5.555	5.722	5.889	6.056	6.222	6.387	6.553	6.717
20	5.233	5.401	5.569	5.736	5.903	6.070	6.236	6.401	6.566	6.731
25	5.247	5.415	5.583	5.750	5.917	6.083	6.249	6.415	6.580	6.745
30	5.261	5.429	5.597	5.764	5.931	6.097	6.263	6.429	6.594	6.758
35	5.275	5.443	5.611	5.778	5.945	6.111	6.277	6.443	6.608	6.772
40	5.289	5.457	5.624	5.792	5.959	6.125	6.291	6.456	6.621	6.786
45	5.303	5.471	5.638	5.806	5.972	6.139	6.305	6.470	6.635	6.799
50	5.317	5.485	5.652	5.820	5.986	6.153	6.318	6.484	6.649	6.813
55	5.331	5.499	5.666	5.834	6.000	6.167	6.332	6.498	6.662	6.827
60	5.345	5.513	5.680	5.847	6.014	6.180	6.346	6.511	6.676	6.840

′	40°	41°	42°	43°	44°	45°	46°	47°	48°	49°
0	6.840	7.004	7.167	7.330	7.492	7.654	7.815	7.975	8.135	8.294
5	6.854	7.018	7.181	7.344	7.506	7.667	7.828	7.988	8.148	8.307
10	6.868	7.031	7.194	7.357	7.519	7.681	7.841	8.002	8.161	8.320
15	6.881	7.045	7.208	7.371	7.533	7.694	7.855	8.015	8.175	8.334
20	6.895	7.059	7.222	7.384	7.546	7.707	7.868	8.028	8.188	8.347
25	6.909	7.072	7.235	7.398	7.560	7.721	7.882	8.042	8.201	8.360
30	6.922	7.086	7.249	7.411	7.573	7.734	7.895	8.055	8.214	8.373
35	6.936	7.099	7.262	7.425	7.586	7.748	7.908	8.068	8.228	8.386
40	6.950	7.113	7.276	7.438	7.600	7.761	7.922	8.082	8.241	8.400
45	6.963	7.127	7.289	7.452	7.613	7.774	7.935	8.095	8.254	8.413
50	6.977	7.140	7.303	7.465	7.627	7.788	7.948	8.108	8.267	8.426
55	6.991	7.154	7.316	7.479	7.640	7.801	7.962	8.121	8.281	8.439
60	7.004	7.167	7.330	7.492	7.654	7.815	7.975	8.135	8.294	8.452

′	50°	51°	52°	53°	54°	55°	56°	57°	58°	59°
0	8.452	8.610	8.767	8.924	9.080	9.235	9.389	9.543	9.696	9.848
5	8.466	8.623	8.780	8.937	9.093	9.248	9.402	9.556	9.709	9.861
10	8.479	8.636	8.794	8.950	9.106	9.261	9.415	9.569	9.722	9.874
15	8.492	8.650	8.807	8.963	9.119	9.274	9.428	9.582	9.734	9.886
20	8.505	8.663	8.820	8.976	9.132	9.287	9.441	9.594	9.747	9.899
25	8.518	8.676	8.833	8.989	9.145	9.299	9.454	9.607	9.760	9.912
30	8.531	8.689	8.846	9.002	9.157	9.312	9.466	9.620	9.772	9.924
35	8.545	8.702	8.859	9.015	9.170	9.325	9.479	9.633	9.785	9.937
40	8.558	8.715	8.872	9.028	9.183	9.338	9.492	9.645	9.798	9.950
45	8.571	8.728	8.885	9.041	9.196	9.351	9.505	9.658	9.810	9.962
50	8.584	8.741	8.898	9.054	9.209	9.364	9.518	9.671	9.823	9.975
55	8.597	8.754	8.911	9.067	9.222	9.377	9.530	9.683	9.836	9.987
60	8.610	8.767	8.924	9.080	9.235	9.389	9.543	9.696	9.848	10.000

Proportional-Teile.

	14	13	12
1′	2.8	2.6	2.4
2′	5.6	5.2	4.8
3′	8.4	7.8	7.2
4′	11.2	10.4	9.6
5′	14.0	13.0	12.0

Tafel XIV. Tafel XV.

Magnetische Beobachtungen.

Reduktion des Logarithmus der Schwingungsdauer auf unendlich kleine Schwingungsbogen.

Schwingungsbogen p.	Reduktion des Logarithmus
0.0	- 0.00 000
0.5	0
1.0	2
1.5	4
2.0	7
2.5	11
3.0	16
3.5	22
4.0	29
4.5	36
5.0	45
5.5	54
6.0	64
6.5	75
7.0	87
7.5	100
8.0	- 0.00 114

Faktor F = 0.5236 ($\frac{1}{8}$ tang φ + $\frac{1}{8}$ cotang φ) zur Korrektion wegen Ungleichheit der Ablenkungswinkel.

φ	Faktor F
5°	1.003
6	0.838
7	0.719
8	0.630
9	0.561
10	0.506
11	0.462
12	0.424
13	0.393
14	0.366
15	0.343
16	0.323
17	0.305
18	0.290
19	0.276
20	0.264
21	0.252
22	0.242

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